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OF

MEDICAL SCIENCE.

EDITED BY

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&c. &c. &c.

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Ligature of the Carotids. By* JAMES MILLER, F.R.C.S.E., *Lecturer on Surgery, and one of the Surgeons to the Royal Infirmary of Edinburgh.*

IT has long been understood that deligation of both carotids, simultaneously, is fraught with most serious danger to the brain. And it may be supposed, that, were circumstances to have occurred, seeming to demand such a proceeding, the surgeon either would have altogether refused to operate, or at all events would have done so reluctantly, and only with a faint hope of thereby saving his patient from instant death, otherwise inevitable. The experience of Sir Astley Cooper had shown that carotids and vertebrals might all be safely tied, one after another, but singly, and with an interval between each deligation, supposed to be sufficient for the establishment of free anastomotic circulation; and it seems to have remained a settled point that operative treatment could not, with prudence and safety, be pushed with greater rapidity in regard to these vessels. Such an impression probably received further encouragement by proofs often occurring to the operating surgeon, how simultaneous *pressure* over both common carotids, with the view of tem-

porarily restraining hemorrhage during serious incisions of the head or neck, could not be borne with impunity. Cerebral affection rapidly formed, the compressing hand of the assistant had to be removed, and relief came with the renewed flow of blood. But there seems every reason to believe, that in this the carotids were not at all concerned. In two ways the functions of the encephalon may be seriously disturbed;—either by a deficiency of its arterial supply, or by an over-accumulation of its blood, more especially of its venous portion.[1] The latter seems to have been the morbific agent in the circumstances just detailed, the head symptoms being produced not by obstruction of the carotids, but by arrestment of the venous return in the internal jugulars. Such occurrences, therefore, are not to be looked upon as indicating danger to the brain by interference with the carotids alone.

To the question, apparently still an open one—"May both carotids be tied at once, without immediate danger to the brain, and with the prospect of a favourable result?"—an answer in the affirmative seems to be contained in the last number of the Memoirs of the French Academy;[2] with an additional piece of information of much practical importance,—that, after such an operation, the *lung*, and *not the brain*, is the organ to be suspected and watched. M. Robert, (de Lamballe) after narrating a case in which ligature of the common carotid was successfully performed, on account of aneurism by anastomosis of the orbit, details the results of numerous experiments on animals, instituted with the view of ascertaining what are the actual dangers of simultaneous ligature of these vessels. Previous experimentalists have arrived at very conflicting conclusions on the same subject, into which we need not enter, except to suggest, in passing, how probable it is that many of the untoward results have depended on the inexpertness of the operators, and not on *mere* ligature of the arteries. M. Robert's *resumé* of his experiments is as follows:—The vertebral arteries are sufficient for the cerebral circulation. Ligature of both carotids produces no disturbance, either primary or consecutive, of the nervous system or the senses; for in no animal has he observed any lesions of

[1] Late experiments, by Dr John Reid, seem to have determined that, in asphyxia, cessation of the sensorial functions does not arise from diminution of the arterial supply of the brain, but from the circulating blood being of a venous character, and so failing to afford to that organ the excitation requisite for the performance of its functions.—*Edin. Med. and Surg. Journ.* No. 147, p. 450, *and Abstract of Dr R.'s Memoir, at* p. 668, No. IX. *of this Journal, for* 1841.

[2] The safety of simultaneous ligature of two of the principal cervical arteries, in the lower animals, is also demonstrated by experiments conducted by Mr James Spence, and published by Dr Monro, in the "Essays of Dr Monro secundus," p. 95, *foot*-note. The beautiful preparations resulting from the operations, illustrative of *collateral circulation*, are preserved in the anatomical museum of the University.

sight, hearing, intellect, or motion. His experiences, in regard to both men and animals, do not warrant the belief that ligature of one or both carotids can produce palsy and alteration in the brain. The cerebral circulation continues after ligature of both carotids, as is shewn by an opening made in the vessels above the ligature. No dysphagia occurs. In the dog, rabbit, calf, and sheep, only a momentary oppression of the respiration is observed; while in horses, death almost invariably occurs; not by alteration in the nervous system, but by a severe lesion of the lung. The symptoms of disturbance in the respiratory organs are diminished by bleeding before and after the operation. The pulmonary lesion is shewn to be diminished in consequence of the bleedings. Hence he infers the propriety of bleeding "strong men" both before and after the operation, in order to avoid congestion of the lungs. For in his experiments "on several kinds of animals, ligature of the carotids caused no lesion of the cerebral functions; all the untoward symptoms were connected with the respiratory organs, and dissection shewed the lung transformed into a '*veritable poche de sang*.' Death came from the last organ, and not from the brain, which preserved its integrity."

All the horses died within a few hours,—the more rapidly, the more vigorous the animal. It is only since the publication of his memoir, that he has ascertained the possibility of saving the horse after such an operation. The remote cause of death in this animal he supposes to exist in a peculiarity of the vertebrals, which diminish remarkably in size as they enter the cranium, being there no larger than those of the dog. He considers that in consequence of their diminished size, they are unable to maintain an efficient balance in the circulation after ligature of both carotids; they cannot duly carry on the increased amount of blood which is thus thrown on them; and the result is a congestion of the lungs, which, unless relieved by bleeding, ends in fatal apoplexy of that organ. But the brain is undisturbed, for the vertebrals, small as they are in this instance, are yet found sufficient for its arterial circulation; and the venous return ought to be little if at all interfered with by the operation. In the other animals, the vertebrals are of a uniform calibre; and, in consequence, they are much less liable to suffer from the pulmonary lesion.

In no animal did any affection of the brain and nervous system, primary or consecutive, follow his operations, unless in those cases in which he had wilfully either tied or cut across one or all of the nerves which accompany the carotids.

Bringing the results of these experiments to bear upon the human subject, we infer:—1. In future the surgeon need not hesitate to secure both common carotids by ligature simultaneously, should circumstances imperatively demand such a severe

proceeding. For it is highly improbable that the brain shall suffer by diminution of its arterial supply, seeing that in the horse the vertebrals, even though remarkably contracted in size, are found sufficient for this; and it being probable that the comparatively greater size of the human brain, with its consequent greater capacity for arterial blood, will be fully compensated by the comparatively larger size and full anastomotic circulation of the vertebral arteries.

2. The operation must be performed with much delicacy and skill, and with an especial regard to the safety and integrity of the accompanying nerves and vein. For, in the experiments of M. Robert, it was only when the former were cut or tied, that "nervous symptoms," such as difficulty of swallowing, change of voice, derangements of the senses, abnormal movements, and other obvious disturbances of the cerebro-spinal functions, were ever found to supervene. And, as already stated, there seems every reason to believe that arrestment or interference with the return in the jugulars is fraught with infinitely greater danger to the encephalon, by inducing venous congestion there, than is the sudden limitation of its arterial influx to the vertebral supply. In tying other arteries, experience has made us well aware how dangerous it is in any way to injure the venous coats by the needle or ligature; inflammation of these coats, with obstruction of the canal at the point of injury, (the mildest form of phlebitis,) is one of the gravest accidents that follow the operation; and it is very plain that such an accident to the internal jugular must be peculiarly disastrous.

3. After ligature of the common carotid, and more especially after deligation of both arteries,—supposing the operation or operations to have been performed with due regard to the foregoing precautions,—the attention of the surgeon ought to be wakefully directed to the organs of respiration; in as much as the experiments of M. Robert declare theirs to be the texture in danger, not the cerebral. And if, on investigation, it be found that in the autopsies of unfavourable cases of obstruction of the common carotid in the human subject, recent lesions, more or less important, of the lungs have been disclosed,—the precautionary injunction will become all the more imperative.

It may, perhaps, be reasoned thus,—that pulmonary lesion is found to result from injury, by wound or ligature, of the par vagum; that the carotic ligature may be supposed, in the first instance, to affect the brain, and, through the influence of the eighth nerve, involve the lungs in disease secondarily; and that thus, after all, the brain is the organ in danger. But how is this nerve alone singled out for morbid action, the rest of the nervous system remaining undisturbed? It is plainly stated by M. Robert that, in none of his experiments, where the arterial tissue

was alone interfered with, did there occur any indication, however slight, of cerebral disturbance. We are still forced, therefore, to the belief that the brain is not affected by mere diminution of its arterial supply; and that the change of structure in the lungs, resulting from such an operation, is not effected through a perverted influence from the eighth pair of nerves.

4. The form of danger to be apprehended is congestion of the lungs; in other words, an unwonted determination of blood to that organ, caused by a sudden and serious disturbance of the due and healthful balance in the arterial circulation, and resulting either in apoplexy of the lung, if the congestion have occurred rapidly and to a great extent; or in an inflammatory action more or less destructive to the pulmonary texture.

5. To obviate this danger, it will be prudent, more especially in plethoric subjects, to draw blood—the amount varying according to the circumstances of the case—shortly before the performance of the operation, in order to prevent, or at all events diminish this probable interruption of the arterial balance. And in the after treatment of the case, further bleeding will probably be necessary, either to avert evil consequences from the determination to the lungs, which may have taken place notwithstanding all precaution, or to limit or abate the morbid action which may have not only threatened but actually occurred. It will not be sufficient to moderate the heart's action, and the arterial circulation, by antimonials, sedatives, &c.; it is essential that the actual amount of the circulating fluid be diminished.

6. This prophylactic principle need not be confined to deligations of the carotid alone. In operations on other vessels of the first class—subclavians, iliacs, femorals—important internal organs may be saved, and the number of successful issues materially increased, by a precautionary bleeding to a moderate extent, before the operation, and by a more watchful and better directed surveillance than heretofore, during the after treatment.

7. Without coming under the bann of uncharitableness, we may be allowed to suspect that in most, if not all of those cases in which important cerebral affection has supervened, the mere obstruction of the arterial current was not to blame; but that the nerves or vein accompanying the vessel had been more or less injured by the knife, the ligature, or otherwise, during the dissection; or, after the operation, casualties may have occurred in or around the wound, sufficient to account for "nervous affections" of consecutive formation; or cerebral disease has either been induced or aggravated by accidents wholly irrelevant of either the operation or the disease on account of which it was undertaken.

I have been led to place the foregoing observations before your readers, conceiving them to be of practical importance to

the operating surgeon, and fairly deducible from the experiments of M. Robert, and more especially as they seem, to a certain extent, to be borne out by the case of ligature of the common carotid, on the distal side of the tumour, published by Mr Fergusson, in the November Number of the Journal. His patient did not suffer from ulceration of the deligated artery, followed by bleeding,—the ordinary cause of death in unsuccessful cases,—but died within the period of the ligature's separation. On the evening of the same day on which the operation was performed, he complained of slight dizziness and "*difficulty of breathing*, but was otherwise comfortable." May not that have been the result of pulmonary congestion having commenced to form? On the day after, there was "slight pain in the neck during deglutition;" but that was probably the result of inflammation in and around the wound, which is stated to have occurred to a considerable extent. On the 5th day, he is represented as "much troubled with cough, attended with difficult respiration," and "annoyed by mucus collecting in the larynx. The bronchial tubes seemed partially filled with an excess of mucus, and he occasionally, though with seeming reluctance, complained of slight pain in the chest while coughing." Now, the congestion was doing its evil work; an important morbid action had resulted, and was progressing. On the sixth day, we find him "much troubled by cough and difficult expectoration; his breathing somewhat hurried, his countenance anxious, and in his manner an appearance of distress, for which it was difficult to ascribe a direct cause." These pectoral symptoms increased; blood was now drawn for the first time, and was found to possess the inflammatory characters. The cough and expectoration were somewhat relieved, but the oppression of respiration continued to augment, and he sank on the evening of the seventh day. On dissection, the left lung was found to exhibit the mark of no recent lesion, excepting in the middle lobe, which is said to have been "of a darker colour, and more consolidated than any other part of the organ. In all parts of the upper and lower portions of the right lung, (the same side as the deligated artery,) there seemed a greater quantity of mucus than was natural, *and the parenchyma of the middle lobe was gorged with blood and mucus; here and there patches of recent lymph were observable, and several of these were mingled with small effusions of pus.*" Were not these things the results of an inflammatory action caused by the congestion? and was not this congestion consequently the remote cause of death?—for a careful examination is said to have disclosed no other organic lesion, which could have been connected therewith. At the conclusion of the paper, Mr Fergusson states that he has "often wondered since, what might have been the effect of the abstraction of blood at an earlier period of the treat-

ment." There can be no doubt but it would have proved most salutary; and if other cases should be found corroborating M. Robert's opinions as fully as this, there can be as little doubt of the propriety of the *sanguinary treatment* which I have ventured to suggest, as applicable to all cases of deligation of the larger arteries, and more especially of the common carotids. Mr Fergusson promises to follow out the subject of bloodletting in such circumstances. I trust he will not fail to do so, and at an early period favour us with the result of his experience upon this subject.

As an appropriate counterpart to the case of Mr Fergusson, we have one detailed by M. Colson, in the same number of the French memoirs—ligature of the common carotid, also on the distal side of the aneurismal tumour—successful as to the preservation of life, but failing to cure the aneurism. According to his own showing, the performance of the operation does not seem to have been particularly dexterous. On the twenty-first day hemorrhage took place from the wound, and recurred on the forty-third, but on both occasions was readily suppressed. *And besides this accidental depletion, the patient was also bled from the arm on six different occasions, during the period of cure, each time to the extent of twelve ounces.* To this loss of blood may we not reasonably attribute no inconsiderable share in the cure, or rather in the preservation of life, under even unfavourable circumstances?

Mr Lizars tied the innominata on account of aneurism. During the night following the operation, "a sense of suffocation tormented" the patient. On the 16th day, he complained of "slight pain in the right side, and difficulty of breathing, much increased on taking a full inspiration; face flushed; pulse 120, full; skin hot and dry," &c. Leeches were applied with considerable relief. On the morning of the 18th day, he "awoke with a severe fit of dry coughing, which caused hemorrhage from the wound." On the evening of the same day, the cough is reported "harassing." He was bled to twenty ounces; but hemorrhage recurred from the wound, and carried him off on the 21st day. In the right side of the chest, many recent adhesions of the pleura were found; and "*the lungs were apoplectic and softened.*" (*Lancet*, No. 724, p. 603.)

Mr Fearn tied the common carotid, on account of an aneurism of the arteria innominata. The bulk of the tumour had been disturbing respiration, by compression of the trachea. But "her breathing, *from the time of the operation*, had at intervals been much oppressed, and she had many violent fits of coughing. The dyspnœa became very distressing; she was accordingly bled to ten ounces, and forty drops of laudanum administered. Her breathing seemed a little relieved after the bleeding." Next day,

two dozen of leeches were applied to the chest, "with evident relief to the breathing." On the third day, expectoration became very profuse, "attended with violent fits of coughing, and with a most marked mucous rattle in the trachea and larger bronchial tubes." In the report of the 11th day, it is remarked that, "if the circulation through the subclavian be stopped, the breathing becomes shorter and more difficult; and if the pressure be continued for some time, the embarrassment of the breathing is very distressing." Ligature of the right subclavian was performed, however, two years after the deligation of the carotid. Between the two operations, she "had suffered repeated attacks of bronchitic inflammation." Sixteen weeks after the second operation, the patient died of "pleuritis, after a ten days' illness." On dissection, the usual appearances of recent pleurisy were found; and, besides, "the corresponding portions of lung were solid, exuding a bloody fluid of a muco-purulent character, and presenting an example of the red hepatization." (*Lancet*, No. 798, p. 437.)

In the first case of ligature of the common carotid, by Sir Astley Cooper, and which proved unsuccessful, the patient was seized, shortly after the operation, with "a fit of coughing," which Sir Astley "thought would have terminated her existence. During the night the cough proved distressing." Next day, after leeching, the cough was easier; on the third day, it is reported "troublesome," and "the only circumstance of which she complains." On the fourth, a fit occurred, so violent as to occasion a flow of venous blood from the wound; and after this spontaneous bleeding, it again became easier. On the tenth, the cough is stated to be "sometimes very violent." On the sixteenth, "she complained of a most distressing cough, after the fits of which she hooped violently." She died on the twentieth day. The trachea and glottis were found exhibiting traces of inflammation, and thus the cough is partly accounted for; but, unfortunately, the chest was not opened. (*Medico-Chirurg. Trans.*, vol. 1, p. 1.) In the same volume, p. 222, the first successful case, by the same eminent surgeon, is related; and we find on the evening of the second day, the occurrence of a cough, along with troublesome accumulation of mucus in the trachea. On the fifth day, he "coughed much," and was otherwise uneasy. Afterwards, however, he had no unfavourable symptom. In an unsuccessful case by Mr Vincent, (vol. 10, p. 212,) cough, with irritation in the trachea, occurred on the third day. On the thirty-third, "a fit of coughing came on, and respiration grew difficult;" he died on the same day. The lungs do not seem to have been examined.

Mr Liston tied the common carotid and subclavian arteries at their origins, on account of aneurism of the latter vessel. Next day, there was "pain in the chest." On the second day, he had

more pain in the chest;" and "there was difficulty of breathing, complained of more or less ever since the operation." On the third day, "the pain still continued violent, and was fixed in the chest." "He was accordingly bled to six ounces; the blood was buffed and cupped." In the evening he was bled again; each time with relief. On the fourth day, "difficulty of breathing, with pain in the chest," returned; and blood, of the inflammatory character, was again drawn. On the fifth day, the pain still continued, especially "in the region of the sternum." On the seventh day, the pain is described as "violent," and leeches were applied to the chest; the "difficulty of breathing," however, remained "distressing." On the eleventh day, hemorrhage occurred from the wound, and the patient sank on the thirteenth. "On removing the sternum, a quantity of pus and blood was found in the anterior mediastinum. The pericardium contained a quantity of bloody serum. A false membrane was found, both on the heart, and lining the whole interior of the pericardium:"—but, strangely, the condition of the lungs is not mentioned. (*Lancet*, No. 779, p. 669.)

The patient in whom Mr Busk tied the common carotid successfully, on account of aneurism by anastomosis in the orbit, suffered severely from chest symptoms. The day after the operation, he was bled, with immediate relief; but, for some days, the cough remained troublesome. (*Lancet*, No. 652, p. 862.)

In a case of ligature of the carotid, by Dr M'Aulay, "much pain of the chest" was complained of after the operation, but only for a short time. (*Ed. Med. and Surg. Journal*, vol. 10, p. 180.) M. Arendt, of St Petersburg, tied the common carotid on account of aneurism by anastomosis in the face. After the operation, "the only unfavourable event was a slight attack of angina and cough, which was, however, soon subdued by the use of leeches and mercury." (*Lancet*, No. 285, p. 618.) In Mr Wardrop's first case of operation on the distal side, "severe fits of coughing" are mentioned after the operation, as causing increase of pulsation in the tumour. (*Lancet*, No. 122, p. 484.) Mr Key tied the common carotid; and in the report of the case, after the operation, which proved fatal, cough and other chest symptoms occupy a tolerably prominent part. In the account of the autopsy, it is stated that "the lungs were inflamed a little; the lining membrane of the bronchiæ was red; the bronchiæ themselves were nearly full of muco-purulent fluid." (*Lancet*, vol. i., p. 492.) A successful case of ligature of the common carotid for aneurism, is related by Mr Lyford; and we are told that "not a single unpleasant symptom occurred during the whole progress of the cure, with the exception of a troublesome cough." (*Medico-Chirurg. Trans.*, vol. xi., p. 98.) Mr Goodlad tied the common carotid, before removing a tumour from the head and

neck; on the third and fourth days after the operation, the patient was troubled with a cough, which, however, proved mild and yielding. (*Medico-Chirurg. Trans.*, vol. VII.) Dr J. A. Robertson tied the common carotid, within half an inch of its origin, with success, on account of aneurism. Just before the operation, much blood had been lost by hemorrhage from the tumour; in fact, during its performance, the patient was in a state nearly amounting to collapse, having lost "upwards of one hundred ounces of blood," during the two previous days. To such spontaneous bloodletting, though carried to a greater extent than a surgeon would feel warranted in advising, the patient's recovery is probably to be attributed, in a case otherwise by no means promising. (*Dublin Journal of Medical Science*, January 1838.) In Dr Bushe's successful case of ligature of the carotid on the distal side of the tumour, the patient was bled four times during the period of cure. (*Lancet*, No. 244, p. 150.)

I regret that time has not permitted me to investigate a more numerous list of cases of carotid ligature, with a view to this inquiry. I must rest contented with the above corroboration of the practical inferences, meagre though it may seem; hoping that I shall have directed the attention of others more competent, to the further elucidation of what bears so closely and so weightily on surgical practice. No doubt, "cough" is likely to result from laryngeal causes, after carotid ligature, by direct irritation from the wound, and more especially if undertaken on account of carotid aneurism; but it seems very plain, that in the cases to which I have referred, the chest was to blame for at all events the greater part of the symptoms of disordered respiration; and when dyspnœa has been already occasioned by pressure of an aneurismal tumour on the trachea, increase of that dyspnœa after the operation is not be attributed to the same cause as that from which it originated.

On the merits of Brasdor's operation, I have no wish to enter. As yet, I fear, a searching inquiry will afford not many more than two actual cures out of numerous attempts. But if it is to succeed any where, it is in the common carotid, for very obvious and well-known reasons. And it appears to me, that to M. Robert future operators are indebted for information on this subject, likely to conduce most powerfully towards success,—not only as regards this particular operation, but in ligature of the common carotid under all circumstances, and likewise in deligation of all arteries of a high class.

With regard to the case of ligature of the common carotid, on account of aneurism by anastomosis in the orbit, detailed by M. Robert, it is interesting, as adding another proof—where proofs are still scanty—how this abnormal condition of the blood-vessels

of a part may, under certain circumstances, be cured, by simply cutting off their main arterial supply, and at the same time withdrawing from them the influence of the heart's impulse. No one will seek to deny, that when it is possible to deligate, not the main artery or arteries that supply the tumour, but the tumour itself,—to strangulate it, and induce its destruction by sloughing —this is by much the preferable mode of cure. But when circumstances preclude the possibility of this, it is most gratifying to feel assured, that there remains a means within our reach, whereby permanent cure is, in certain cases, still attainable.

In the orbit, this form of tumour is not amenable to the direct method, but has been successfully treated by Messrs Travers, Dalrymple, and Busk, by deligation of the common carotid, on the same side. M. Robert has detailed a similar example in full, and simply alluded to a second. In the following case, I am sorry to say, death followed the operation; but, so far as the tumour was concerned, it may still be regarded as adding one more proof in favour of the mode of treatment.

The patient, a fat woman, aged forty-two, was under the care of my friend Mr Girdwood of Falkirk. I saw her along with Dr J. Y. Simpson, in the summer of 1836; and to his kindness my memory is much beholden in the following account of the case previous to the operation.

She had enjoyed excellent health until about eighteen months before the time of our visit, when she was suddenly awakened from sleep by the sensation of a loud crack within the head; this was followed by a painful beating and "soughing" sound (said by the patient to resemble the noise of bellows) over the whole right side of the head; and, according to her own statement, it had never since abated, night or day. On first attempting to rise, a giddiness prevented her. Swelling formed over the whole face; on the left side it subsided after a time, but on the right it remained permanent. About a month after the original alarm, unusual prominence of the eye was detected.

The whole right side of the face, and a portion of the left, was of a red or purplish colour; the sub-integumental veins were plainly seen, numerous, dilated, tortuous, and knotted like injected lymphatics. The right eye was protruded and depressed, and the upper eyelid seemed completely paralyzed; the lower was œdematous, and the cheek considerably swollen. Beneath the drooped upper lid, between the eyeball and orbit, a tumour was found, prominent, about the size of a hazel nut, pulsating synchronously with the heart's action, and emitting a distinct and strong vibratory purr. On pressure, it receded considerably, so as to allow partial insertion of the finger beneath the orbital margin; and at the same time the pain and noise in the head most materially diminished. On compressing the right carotid,

a similar result ensued, but to a less extent, pulsation still continuing in the tumour. Vision was unimpaired; the eye was but very slightly injected; the iris was little, if at all mobile; and the eyeball possessed scarcely any power of motion. Depression of the head and exercise increased the pain and beating, and induced vertigo.

In all the right eye, the stethoscope indicated a prolonged *bruit de soufflet;* over the left eye, a slight *bruit* was heard; and this increased as the instrument was made to approach the internal angle of the right eye, at which point it was remarkably strong and distinct. None could be detected in the scalp or right cheek; but over the right eyebrow it was very perceptible. Pressure on the inner angle completely stopped the *bruit*, changing it first into a cooing sound; but the pulsation still continued.

Within the last two months, the tumour was stated to have grown considerably; the pain and distressing sounds had increased; and vertigo was of more frequent occurrence. The patient was anxious that something should be done for her relief; and in consultation it was agreed to tie the common carotid. This was accordingly done, after a difficult dissection in a deep and troublesome wound.

The patient was left under the skilful management of Mr Girdwood; and to him I am indebted for the particulars of the subsequent history.

The pulsation, *bruit*, and thrilling sensation ceased in the tumour immediately after the operation; but about four hours afterwards they returned, along with severe headache. Sixteen ounces of blood were taken from the arm, and every symptom of activity in the tumour again disappeared. Early on the morning of the second day after the operation, the patient was much alarmed by several pieces of wood falling upon her bed, in consequence of some ill-timed alterations in the roof of the house. In the course of the same day, she got drunk on whisky; and this mad excess was followed by paralysis of the left side, preceded by headache, and accompanied by a strong throbbing pulse, and a return of pulsation, *bruit*, and thrill in the tumour. Thirty ounces of very buffy blood were abstracted; syncope took place; the *bruit*, thrill, and pulsation, instantly ceased; nor did they return during the remainder of the case. The apoplectic symptoms, however, did not remit, and death took place at the end of eight days after the operation. A troublesome cough persisted throughout the whole treatment, but not more severe after than before the ligature of the carotid.

Extensive organic lesion, chiefly of old standing, was found in the brain. There were many old adhesions in the pleura; and the lungs were also much altered in structure, but as in the pleura, these changes—of which hepatization formed the promi-

nent feature—seemed chiefly if not wholly of ancient date. Her arms bore the marks of innumerable venesections, which she stated had been performed on account of inflammatory attacks in the chest. Being a stranger in the neighbourhood, no authentic account of her previous history could be obtained at the time; but on subsequent inquiry, Mr Girdwood ascertained that for years she had been a notorious and habitual drunkard, as well as otherwise of irregular habits.

I regret that at this distance of time, I am unable to give a more distinct account of the autopsy, of which unfortunately no notes were taken at the time; and that consequently we are unable even to guess what part of the organic lesions was the result of the operation, what of previous dissipation and disease.

In the history of such cases, prior to the operation, there has prevailed a striking similarity, apparent to any one who may choose to compare the narratives. In one particular the resemblance is more obvious than intelligible, namely, the sudden and marked occurrence of the disease. Mr Travers' patient "felt a sudden snap on the left side of her forehead," followed by pain and a rapid swelling of the eyelids. In Mr Dalrymple's case, "hearing the noise as of the cracking of a whip, and feeling at the same moment an extraordinary kind of pain in the globe of the left eye, she awoke in great alarm, and leaped out of bed. About ten or twelve hours afterwards, the eye became inflamed," &c. In Mr Busk's case, the disease followed an injury of the head. M. Robert's patient, "a literary man, much addicted to reading, was surprised one morning to find his right eye prominent, engorged," &c. In the present instance, the patient was suddenly awakened from her sleep, by the sensation of a loud crack within her head, followed by pain and noise.

M. Robert is of opinion that the cure is not accomplished by obliteration of the affected arteries, preceded by coagulation of their contents; but by diminution of their supply, and more especially by removing from them the impetus of the heart's action; thus inducing an infinitely less degree of distension, and enabling them to regain their wonted calibre, yet remaining unobstructed. So far as appearances went, the case I have related was corroborative of this view; but I am sorry to say, that the post-mortem examination threw little light on the subject, an over-anxiety to perfect the preparation by injection having proved injurious to its structure. It was ascertained, however, that the orbital arteries had almost, if not wholly, regained their normal appearance; they were pervious; the ophthalmic vein, much enlarged, was filled with a firm coagulum; and the parts looked as if distended and tortuous veins had formed no inconsiderable share of the tumour's bulk.

The history points to the adoption of active venesection in

similar cases, not only to ward off or diminish pulmonic lesion, but also to expedite, or rather to contribute materially towards, the disappearance of the vascular disease; more especially should the symptoms of this prove slow in abatement, after the carotid ligature. After each bleeding, the pulsation, thrill, *bruit*, and bulk of the tumour were affected in the most marked manner; after the last, which was to syncope, they ceased on the instant, and were not again resumed.

ARTICLE II.—*Case of Vesico-Vaginal Fistula, treated by the Actual Cautery—Obliteration of the Os Uteri—Labour.* *By* S. A. PAGAN, M.D., F.R.S.E.

(Read before the Med.-Chir. Soc., 16th December 1835.*)*

The following case relates to a description of injury so extremely disastrous and intractable, that any contribution affording an example of cure, must be held to possess some practical value. Such as it is, I offer it to the Society as an additional atom, at the disposal of any one who may be inclined to occupy himself so usefully, as to bring the comparative merits of the different modes of practice now in use, to the task of more rigorous experiment, and on a larger scale than has hitherto been attempted.

The principles which guide us in the cure of fistula in general, are now sufficiently well understood, and the method very exactly set down; but vesico-vaginal fistula seems reserved to prove, that no general principle in medicine is universally applicable. Great surgeons have seldom had much taste for any thing connected with midwifery, and our most eminent accoucheurs have seldom been great surgeons; hence it is, perhaps, that the subject has received less systematic attention than it merits, and that the best mode of treatment still remains an open and unsettled question. That this is the case, cannot be doubted by any one who looks over the medical periodicals of the present, or any former day, wherein we find case upon case, with novel inventions, and occasionally suggestions of so formidable a nature, that nothing but the general inefficiency of ordinary modes of practice can account for them. The climax to these, is a recent proposal to lay the urethra, bladder, and vagina, into one, by a bold stroke of the knife, and trust to granulation for a radical cure, as in other fistulæ.

The remedy employed in the present case, is as old, probably, as the time when surgery first began to be directed to the reparation of such injuries; but the principle suggested by Mr Lis-

ton, which guided its application, is new to me, and I fain hope, may be found useful in directing others.

It will be observed, that a very long time was occupied in completing the cure; this may partly be attributed to the fact of the patient residing at a great distance, so that six months sometimes intervened between the applications of the cautery. Had she been at hand, possibly half the time might have been saved; but we want satisfactory data to prove at what period after cicatrization the greatest amount of contraction is attained, without which, of course, no precise opinion on this point can be found: any one, however, that holds out the prospect of a speedy cure in such cases, will but discourage his patient, and bring discredit on himself and on surgery.

Case 1.—Mrs. K——, aged thirty-one, wife of a tradesman residing in Stirlingshire, was delivered of her first child in December 1830, after severe and lingering labour of three days' continuance, and which was completed at length by means of instruments.

She was not long in discovering that she had lost the power of retaining her urine—that it did not come by the natural passage—in fact, that a vesico-vaginal fistula was established. She also states, that feculent matter, in a relaxed condition of the bowels, made its way into the vagina for a period of some months, but that this symptom gradually disappeared, and never gave her serious inconvenience.[1]

In March 1831, having had little prospect of relief held out by her medical advisers in the country, she contrived to reach Edinburgh, where she put herself into the hands of my lamented friend, Dr Thomas Molison. At this period, from being a fine healthy young woman, she had acquired the appearance of a person in the last stage of some organic disorder. The urine dribbled away continually, so that she was never dry for a single instant; and she describes the irritation and discomfort to have been so utterly intolerable, as to render life a burden to her. The size of the false passage was so considerable, that she could easily introduce into the bladder her middle finger, covered with four plies of surgeon's lint. Dr Molison took a warm interest in the case, and set about devising means of relief with his characteris-

[1] In most surgical works that make mention of puerperal fistulæ, the recto-vaginal and the vesico-vaginal are placed on a level in point of severity; and in some published cases, much credit is apparently claimed for the cure of the former affection. Now I apprehend, that the recto-vaginal, unless of extraordinary extent, has a constant tendency towards a spontaneous closure, and that little more is required for this end, than great cleanliness and attention to the bowels, avoiding constipation on the one hand, and the production of liquid stools on the other. I would not, however, be understood by this to assert, that surgery may not be usefully employed in quickening the healing process, and so ridding the patient more promptly of a loathsome infirmity.

tic zeal and humanity. He had the patient accommodated with an apartment in his own house, and spared neither trouble nor expense in executing every plan which his reading or ingenuity suggested for the palliation and cure of this loathsome and pitiable state of things.

The catheter and bag—the "urinal caché" of Desault—gave partial relief while in the recumbent posture, and kept her more comfortable, therefore, during the night, but it had no effect whatever so long as she was in a sitting or erect position. The parts were in too irritable a state to admit of any thing in the shape of an *effectual* plug or passage being retained in the vagina, though the patient was often in the habit of keeping a piece of sponge or a dossil of lint there, with the natural enough idea that the current in this direction might thus be retarded or stopped, but the practice, being found rather hurtful than beneficial, was dropped. However, by great attention to cleanliness, and the assiduous employment of emollient and astringent injections, the local irritation was considerably lessened, and the general health consequently much improved.

It was in this favourable condition that Dr Molison began to employ more active measures, with a view to a radical cure, by closing the false passage. Although I had frequent opportunities of seeing the case, I kept no notes of it at this time, and my memory does not enable me to speak with precision regarding all the means employed, or their order of succession. I believe the actual cautery was first tried. Dr M. imagined that by keeping up an inflamed, and puffy, and raw condition of the edges of the orifice, adhesion would be promoted, and for this purpose the hot iron was applied a great many times in pretty quick succession. The patient herself states, that her hopes of a cure by this remedy were greatly excited at first,—that for a *few days* after every fresh application of it, the urine almost ceased to flow per vaginam, but on the whole, at the termination of the experiment, that the aperture was *increased* rather than *diminished* in extent. Dr M., I know, was disgusted at the result of this method of treatment, which he had heard so highly extolled, and spoke of it afterwards as worse than useless. He had next recourse to another plan, which has been recommended as occasionally successful; this was to excite inflammation in the edges of the opening by caustic or scarification, and then draw them together by means of the interrupted suture. This operation was difficult, tedious, and painful. I assisted him twice in the performance of it, which he accomplished with great dexterity, but it ended, like the other, in disappointment:—the stitches came away in a few days, but no adhesion was effected.

How many months the patient was under treatment at this time, I cannot say, but I know she returned home, with improved

general health certainly, and with increased experience and tact in the management of herself, but without any sensible amelioration of the complaint.

I saw nothing more of this case for two years. In the spring of 1833, Mrs K——— called upon me, and requested my advice, as Dr Molison had left town. I confess I undertook the case without the hope of being useful, and regretted that the poor woman had put herself to the trouble and expense of coming to Edinburgh, for being aware of all that had been done without effectual relief, I imagined the resources of our art to be pretty nearly exhausted. However, that no chance might be thrown away, I described the nature of the symptoms to Mr Liston, who was kindly pleased to take an interest in the poor woman, and was, by his assistance and suggestions, so long as he remained in Scotland, mainly instrumental in conducting the case to a successful issue.

On examination at this time, we found the aperture considerably diminished in extent, compared to what it had been two years previously. It was now of a size which would easily have allowed the introduction of the little finger. The other symptoms were substantially as before, and the appearance of the patient continued to indicate anxiety and suffering, and a broken constitution. She stated to us, that the opening had continued to contract for some months after leaving Edinburgh, but had undergone no change for upwards of a twelvemonth; that her attention had been altogether directed to the prevention of excoriation, by assiduous ablution, and the use of the catheter and bag, which last, however, served no good purpose, except when in bed, and upon her back.

It was agreed in consultation, that the actual cautery should again be had recourse to,—not, however, at short intervals, but with an intervening period of a few months.

Mr Liston's experience enabled him to state, that no sudden advantage was to be expected from the operation; on the contrary, that the more immediate effects would apparently be to aggravate the evil, inasmuch as the disengagement of the slough might for a time increase the size of the opening; but that we might confidently look to accomplish a cure in time, through the consecutive effects of the cautery,—that process, namely, of gradual contraction, analogous to what we observe in the cicatrices of severe burns of the skin. Accordingly, it was carefully explained to the woman, that the treatment would occupy a very long time, and that the operation would require to be frequently repeated. The parts were then touched with the iron at a red heat, and she was sent home, with instructions to return as soon after the expiry of two months, as might suit her convenience.

Since that date, April 1833, the cautery has been applied six

times, with intervals of two, three, or six months, according as the patient presented herself. Every successive examination afforded evidence that the aperture was slowly but progressively contracting, and the last two or three times, it was not without some pains that we discovered it at all, though the oozing of the urine demonstrated its continued existence. The last time I had occasion to apply the cautery, was on the 22d August of the present year, when my friend Dr M'Whirter did me the favour of being present. The opening was then barely sufficient to admit a large-sized knitting-wire; it had become somewhat sinuous, and acted as a valve in certain positions of the body, for she had been enabled for some time to retain a considerable portion of the urine when in bed, but it still continued to escape by the fistula when in the erect posture.

She is now (1835) in Edinburgh, and I have seen her within the last few days. She states to me that no urine has come away by the false passage since the last operation. The bladder appears to have lost all morbid irritability,—permits itself to be freely distended, and is capable of containing the natural quantity of urine. The urethra has been considerably dilated by the long-continued use of the catheter, but she has nevertheless perfect command over the sphincter, except in making some violent exertion with the bladder pretty full; in such circumstances, some urine does escape occasionally, but this she hardly looks upon as an inconvenience, because it is easily prevented by a little attention.

The preceding case of urinary fistula in the female, presents no peculiar feature so far as its origin and symptoms are concerned, but as respects the treatment, it does appear to me to possess some points of interest, from the fact of almost every method having been energetically tried, which has come recommended to us from any authority worth regarding.

From the days of Petit up to the present times, the practice recommended has been of two kinds, palliative and radical; the palliative system, however, always having reference to the chance of a radical cure, by the natural contraction of the parts.

Desault, if not the author of, was at least supposed to have perfected, the palliative method, and enjoyed a great reputation throughout Europe in such cases. The main objects he kept in view were, 1st, To present a ready outlet to the urine, *per vias naturales*, by keeping a catheter constantly introduced, to which was attached a bottle or water-proof bag, called a "*urinal caché*." 2dly, To prevent the escape of the urine *per vaginam*, by stuffing that passage with dossils of lint or pessaries of a cylindrical form, which he considered of essential utility, not only in this respect, but also in promoting the cure, by holding the edges of the opening habitually in contact. In this way he states,

in general terms, that he was in the custom of curing such cases in periods of from six to twelve months.

British teachers and practitioners have very generally recommended and followed this system of Desault, with such modifications, however, as their individual experience may have suggested. Thus, while many consider the plug or pessary as an indispensable part of the apparatus, and have taxed their ingenuity to improve its form or material, others have rejected it altogether, alleging that in most cases its pressure is intolerable, and that even where it can be borne, it does not accomplish the object proposed, because, the vagina being an elastic tube, any plug of sufficient diameter to assist mechanically in retaining the urine, must necessarily tend to keep the lips of the false passage apart, and thus prevent or retard that natural process of contraction, on which the hope of a successful issue hangs. People who entertain this opinion confine their attention entirely to the comfort and cleanliness of the patient by the use of ablutions and injections, and to the proper direction of the urine. These, indeed, are indispensable measures in any method of treatment we propose to pursue, let it be palliative or radical; but with regard to the *urinal caché* I strongly suspect, use it as we may, that it will in many instances be found to disappoint the expectations of the sanguine. In fact, its practical utility depends altogether on the extent and position of the fistula; in those of considerable size it will prove a source of irritation, without any corresponding advantage; in others of less extent it will answer the purpose intended in certain positions of the body only; sometimes in the recumbent, sometimes in the erect, while in very small ones, which are often sinuous, it may be of the greatest service. In none, however, is it so completely effectual as to prevent the escape of urine, more or less, in *some* posture of the body, or the consequent excoriation and ammoniacal odour which render the unhappy patient loathsome to herself and others.

Such are the means recommended by the advocates of the palliative mode of treatment, and that they have been occasionally successful can no more be doubted, than that they have very generally failed in accomplishing a cure.

Nothing to my mind can afford a stronger proof of the extreme intractability, by ordinary means, of this horrid infliction than the extravagant plans and complicated apparatus which, from time to time, have been proposed, and even submitted to, in expectation of a radical cure. But without noticing such projects, I believe I am correct in stating that the operative methods of treatment at present patronized by the sober-minded of the profession, are confined within very narrow limits; indeed, the use of sutures being apparently abandoned in despair, I do not know that any other available agent can be brought into

competition with *cauterization* in one form or other. The actual and potential cauteries are old remedies, but the former, till of later years, having been in extremely bad odour in this country, has not, I apprehend, had a very extensive trial, and in France, where it has been longer and more generally employed, I do not see from the most recent accounts that it is rising in estimation. The potential cautery has undoubtedly had a fairer trial in Great Britain, but with regard to the whole class, as the *principle* which indicated their application was the same, the variety was in the choice of the surgeon, almost as a matter of opinion or taste. This principle, so far as I have been able to discover, has uniformly been, to destroy the callous edges of the fistula, to produce ulcerative inflammation, and so promote granulation and ultimately adhesion. With such objects only in view, it was obviously of little moment whether the heated iron, a mineral acid, or the lunar caustic was employed. But if the principle suggested by Mr Liston, which was acted upon in the preceding case, be correct, it will follow of course that the actual must claim a preference over any other form of cautery.

The objections urged against its use are imaginary, and will be found in a great measure groundless in practice. The pain, though sharp, is momentary, and infinitely less persisting than that caused by the mildest escharotic, and, moreover, productive of so little constitutional disturbance, that the subject of the preceding case was always ready to begin her journey homewards the day but one after each application.

SUPPLEMENT TO THE ABOVE CASE OF VESICO-VAGINAL FISTULA.

OS UTERI OBLITERATED—LABOUR.

(Read before the Med.-Chirurg. Soc. of Edinburgh, 3d Nov. 1841.*)*

Mrs K., the subject of the above paper, continued in such fine health that I had not seen her for a great many months, when her husband came to me, on the 16th November 1838, in great alarm, and told me that he feared she was dying. I found her under a similar impression. She had violent shivering, and complained of excessive pain of back and abdomen, occurring in paroxysms. After witnessing these symptoms for a short time, I made some inquiries, and learnt that she had not seen the catamenia since May,—that her size had been progressively increasing, and that she had even felt motion, but had attributed all such symptoms to obstruction and nervousness,—believing pregnancy to be out of the question after all she had come through. I was of a different opinion. I felt convinced she was in labour, and soon satisfied myself of the fact.

On examination per vaginam, I felt the uterus low down, bulky and heavy; but, with all the pains and attention I could employ, utterly failed in making out the os uteri. After very careful search, however, I fancied I detected a vestige of it in the shape of a very small projection, barely perceptible to the finger; and I concluded, therefore, that the orifice had been obliterated after conception.

My first attention was directed to moderate the action of the uterus by an opiate, until I should have the benefit of a consultation under circumstances so novel. I soon found my friend Dr M'Whirter, who, after careful examination, perfectly coincided with me as to the facts of the case, and afterwards continued his valuable advice and assistance in its management and completion. As the pains, though frequent, were not urgent, we agreed to let them take their course for a few hours, conceiving, if they failed in forcing the adhesions, that they would at any rate probably put them so much on the stretch as to render their incision comparatively safe. I saw the patient every two hours during the afternoon, and at 7 P.M., no perceptible progress being made in the development of the os uteri, though the pains had become urgent, we were forced into the conviction that incision presented the only mode of relief that remained to us. Our friend, Professor Syme, had kindly interested himself in the case, and having agreed to employ the edge tools if required, was present at the consultation. He introduced the bistoury along his finger and made a small incision at the place I have mentioned, as the probable vestige of the obliterated os uteri. He had no sooner done this than the lips of the wound rapidly receded, and the naked presentation was distinctly recognised. The dilatation proceeded favourably with every successive pain, and a six months' fœtus was born in an hour and a half. It was a breech presentation with the face to the pubes, but, from the smallness of the child, delivery presented no difficulty worth mentioning. The mother did perfectly well,—indeed, the operation was unattended either by pain or hemorrhage, which must be attributed entirely to the fact of Mr Syme having most expertly succeeded in dividing the adventitious substance by which the natural aperture was closed, without touching the proper texture of the uterus at all.

It is obvious, in this case, that the obliteration of the os uteri must have taken place subsequent to conception, and that it affords, therefore, no countenance or support to any given theory on the subject of generation; for I learn from Mrs K. that, after her cure, the catamenia were pretty regular; that they always, however, were preceded by some disturbance, pain, and sense of fulness; that, on the third day, she was generally sensible of something suddenly giving way, after which they flowed freely

and terminated the following day. It would appear, therefore, that the long-continued irritation kept up in the vagina, by the infiltration of urine, had produced that species of action in the parts, tending to the effusion of organizable lymph,—commonly called adhesive inflammation,—that the monthly discharge had served to force the adhesions before they had acquired firmness and consistency, but that six months had sufficed to render them probably the strongest point in the whole periphery of the uterus.

3, MELVILLE STREET, EDINBURGH, *Nov.* 1841.

ARTICLE III.—*On the use of the Carbonate of Iron in the treatment of Hooping-Cough. By* J. CHISHOLM, M.D., *Inverness.*

Having recently had an opportunity of trying the carbonate of iron in hooping-cough, as recommended by Dr Lombard of Geneva, (*Dublin Medical Journal*, November 1838), I am desirous to state the result of my experience, which is such as may prevent some of my professional brethren from resorting to that remedy with high expectations, and giving it indiscriminately in all cases. Although, certainly, I am not warranted to award that meed of praise to the carbonate which is bestowed upon it in the memoir referred to, I am happy to have it in my power to bear testimony to its efficacy, as a valuable addition to our remedial agents in the treatment of hooping-cough. This disease, when uncomplicated, is rarely, if ever, attended with danger; and the great objection to the employment of the carbonate is, that it is incompatible with the complications which, for the most part, render the disease dangerous, particularly *acute* bronchitis, (and what is the disease but a bronchitis *sui generis?*) pneumonia, the consequences of cerebral irritation and inflammation. Without particularizing the treatment pursued in any individual case, I may mention, that I gave it to five or six children at the same time, in different stages of the complaint, and I may say, the invariable result was a diminution in the frequency of the fits, as well as a less degree of spasm; not, however, followed by a restoration to health in all cases, as in the natural subsidence of the disease, but in the development of some of those complications already alluded to. In one case, indeed, after the acute symptoms of pleuritis and bronchitis had been removed, and my patient, a girl about fourteen, had been reduced to a very weak state, she being of a highly strumous constitution, the carbonate in doses of five grains three times daily, really acted in a manner deserving the title of *specific*. In the course of a few days she was restored to a measure of health and strength that appeared to me quite extraordinary, and her convalescence went on unin-

terruptedly. During her exhausted state the paroxysms were so violent, as to threaten suffocation, and partook much of a general convulsive character. The usual and most powerful antispasmodics had been previously given without any alleviation of her sufferings. A sister of this patient, a girl a few years younger, who held out stoutly, took the carbonate, but not with the same happy effect—symptoms of pleuritis, on the contrary, supervening, for which it was necessary to lay aside the carbonate, and use antiphlogistic measures. From the foregoing data I cannot of course agree with Dr Lombard in the assertion, "that it will never produce any inconvenience." I feel persuaded that it may be extremely injurious if given prematurely, and especially to children of a sanguineous temperament. It may be that the children in Geneva are more of a leuco-phlegmatic constitution than in this country, and that the carbonate of iron can be given to them with greater impunity. The character of the disease may also assume a less phlegmatic type at times than others, dependent on some peculiarity in the state of the atmosphere, which will make the carbonate a more eligible remedy. But in general, the disease is ushered in with a febrile tendency, contra-indicating in its primary stage the use of the carbonate. In the absence of any particular complication of an inflammatory nature, and in the advanced stage of the complaint, when the spasmodic cough alone assumes a distressing urgency, I believe, that if judiciously exhibited, the carbonate will prove extremely beneficial. It is foreign to my purpose to enter more particularly into the consideration of the treatment of hooping-cough, my object being to throw out a few hints, with the view of keeping within due bounds that confidence in the carbonate which a perusal of Dr Lombard's communication is calculated to create, and of pointing out the danger of an indiscriminate employment of the remedy.

ARTICLE IV.—*Case of Knot in the Funis Umbilicalis, causing Death of the Fœtus.* *By* JAMES GRIEVE, M.D., *Physician to the Dumfries and Galloway Royal Infirmary.*

Mrs Glendinning, on the 3d September 1841, three weeks before her full period of pregnancy, was seized with the pangs of labour, accompanied with slight hemorrhage. Under the influence of a dose of opium, the pains and hemorrhage subsided, and she had no return of either until the 24th, when I was called to attend upon her. On making the necessary examination, I found the head presenting, the cranial bones moveable, and overlapping each other at the sutures, and the scalp soft and

flabby. The pains being inefficient, and the head advancing slowly, I gave her the usual dose of the infusion of secale cornutum, which had the desired effect, the fœtus being expelled in three quarters of an hour after its administration. The fœtus was in a state of decomposition, and the funis soft and shrivelled, and towards its middle had a knot upon it, so firm as completely to arrest the umbilical circulation. According to the experience of our most recent obstetric writers, (*vide* Rigby, Churchill, and others), knots on the cord are by no means infrequent; but it is rare, as in the present case, to find them so firm as to arrest all circulation through the cord, and thus cause the death of the fœtus. It is supposed, by Rigby, that these knots are made by the chance position of the cord in the form of a ring, and the fœtus happening to float through it, a noose is formed, which by some accidental circumstance is tightened into a knot. On the supposition of a noose previously existing, I think there can be but little doubt of its having been tightened by the uterine efforts which occurred exactly three weeks previously to the full period of her pregnancy; and it is fair to presume that the child died at that time, from the putrid state it was in when expelled, and from the fact of Mrs G., though previously sensible of the motions of the fœtus, having experienced a sensation of coldness and weight in the abdomen, especially in turning from one side to another, as well as other indications of the death of the fœtus during the last three weeks of her pregnancy.

ARTICLE V.—*Case of Tracheotomy.* *By* JAMES SPENCE, Esq., *Surgeon; Assistant Demonstrator of Anatomy in the University of Edinburgh.*

(Read before the Med.-Chirurg. Society of Edinburgh, 3d Nov. 1841.*)*

On the morning of Thursday the 23d of September, I was sent for in great haste to see a child, who, according to the statement of the messenger, "was suffocating from something sticking in the throat." On reaching the house, which was situated in the immediate vicinity; I found the patient, a boy about the age of four years at most, asphyxiated; his face was much swollen and livid, the eyes were protruding, and the veins of the neck turgid, with the nostrils dilated. The respirations were prolonged, and accompanied with a peculiar stridulous noise. The mother of the child told me, that, on the previous evening, having to go from home, she left the child in care of another woman, and that she had, before going away, given the child some small plums, while eating which, he was observed to cough violently, and roll himself on the ground, and on recovering from this state, he

mentioned that he had swallowed one of the plum stones, but as no further symptoms occurred at that time, no notice was taken of it. He continued quite well, and slept as usual during the night, and took his breakfast the following morning; but shortly before I saw him, and whilst playing about the room with the other children, he, on a sudden, cried out that he felt the stone in his throat, and almost instantly fell down in the state of suffocation which I have already described. Although I had no doubt whatever as to the foreign body being in the windpipe, yet, to make assurance doubly sure, I passed a probang down the œsophagus. This met with no obstacle in its passage, and, as I expected, afforded no relief. As the symptoms therefore were most urgent, the extremities becoming cold, and the pulse intermitting, I stated to Mr Lawrie, surgeon, who was present, that I considered the operation of tracheotomy as the only chance of saving the child. Mr Lawrie concurring in this opinion, I performed the operation, which was accomplished without greater difficulty or delay than what might be expected from the want of assistants and the struggling of the child. On the trachea being opened, a quantity of frothy mucus was forcibly ejected, but no foreign body; through the opening, however, the child breathed freely, and the face soon resumed its natural appearance. After waiting a few moments, I passed a slightly bent probe upwards into the larynx, and downwards into the bronchi, but could not detect any foreign body. I therefore introduced a small trachea tube, and left the child in charge of my friend, Dr Smith, until I could procure instruments for extraction. At 11 A.M. I again saw the child, along with Professor Syme, who kindly attended at my request. The child then breathed easily through the tube; but when it was removed, and the opening closed, there was great difficulty in expiration.

The edges of the opening being held aside by small hooks, I again carefully examined both the larynx and bronchi with a probe, but most particularly the larynx, for all the symptoms tended to impress us with the belief that the foreign body was there. Mr Syme also examined the parts, but could not detect it. It was agreed in consultation that it was best to enlarge the opening; I therefore divided the cricoid cartilage so as to allow a more ready examination of the larynx, and a more easy escape of the foreign body, but we were still unsuccessful. Under these circumstances, we deemed it best to replace the tube until the following day. Nothing particular occurred during the remainder of the day: the child was carefully attended to, he continued to breathe freely through the tube, and both sides of the chest seemed to expand equally, and at the same moment. He was ordered a little milk with warm water and sugar, for food, which he partook of readily, and slept at intervals. On Friday Professor

Syme again saw him with me; the tube was withdrawn, but the difficult expiration again returned when the opening was closed; whilst, on the contrary, the breathing was free, and perfectly easy when it was left open. We again carefully examined the larynx and bronchi, but in vain. We could not detect any foreign body, and we concluded that it had probably been pushed up by the probe passed into the pharynx and swallowed, and that the difficulty in breathing might be owing to swelling of the mucous membrane lining the larynx. The tube was once more replaced, and the same treatment adopted as before; a gentle laxative was prescribed, and I desired the stools to be carefully examined. I again saw him at 3 P.M., when I found his breathing was hurried, together with a considerable degree of general fever; the face was flushed, and the pulse rather quick and hard; I therefore ordered some leeches to be applied over the region of the chest, the laxative medicine to be repeated, and an injection to be given in case it did not soon operate.

I again saw him at 8 P.M.; he now seemed considerably easier, there was less fever and restlessness, and the breathing was less hurried; the bowels had been freely opened, and the leeches had bled well. At 10 o'clock I was informed he was rather worse, and, on visiting him, I found him very restless, his breathing had become hurried, and he was thirsty and hot. Having cleaned the tube, it relieved his breathing, and I left him, and sent a person to remain with him during the night, with strict instructions to call me if he became worse. At ½ past 11 o'clock, I was again sent for, as the child had become suddenly much worse. I now found him fast sinking. I introduced a clean tube, and ordered him some wine and water, under which he rallied in a measure, but it was only for a short period, as about midnight he expired.

Having obtained permission from the friends to examine the body, I did so on the morning of the 26th September, and the following were the appearances found on dissection:—

Post-mortem examination of the body.—I carefully examined the larynx and trachea, but could find no foreign body. There was a slight degree of vascularity of the mucous membrane of the larynx, together with some thick mucus in its cavity, but there was very little swelling of the parts.

I laid open the right bronchial tube, which presented nearly its natural appearance, with but slight degree of vascularity of its mucous coating, but there was no foreign body in it. The right lung, with the exception of a little congestion at its posterior part, was of a healthy appearance, and crepitated naturally on being pressed between the fingers. The left bronchus was next examined; and as I saw no foreign body, I was about to give up all further investigation of the thoracic viscera, concluding that it had been pushed upwards during our examination of the

larynx, as I previously conjectured, and that it passed into the stomach, when my attention was arrested by the peculiarly dark appearance of the lower portion of the upper lobe of the left lung; and on cutting into this portion, I found the foreign body, a small damson stone, impacted into one of the large subdivisions of the left bronchus, the larger end of the stone projecting upwards. No other parts were therefore examined.

In reflecting on the case which I have just detailed, some phenomena of a very unusual kind present themselves. In the first place, when we regard the history of the case given by the child's mother, the sudden manner of the attack, together with the urgent symptoms of asphyxia when first seen, and the almost immediate relief afforded by opening the trachea, although no foreign body was expelled; and if we add to this, that while the child breathed freely through the tube, both sides of the chest seemed to expand equally, and at the same moment; but that on the other hand, whenever the tube was removed, and the opening in the trachea closed, difficult respiration ensued,—I think few medical men would hesitate to pronounce as their opinion, that the foreign body was entangled in the larynx; and yet the case just narrated affords an example of all these symptoms being present, whilst the foreign body was impacted in one of the ramifications of the bronchus. It may indeed be urged, and I confess I cannot quite divest myself of the idea, that the foreign body was in the larynx when the child was first seen, and had thus given rise to the very urgent symptoms which led me to operate; and that owing to the struggles of the child during the operation, it had been dislodged from the larynx, and passed into the bronchus. Still, allowing this supposition to be true, it leaves unexplained the cause of difficult expiration which constantly ensued on withdrawing the tube, and closing the opening in the trachea. This is perhaps the most peculiar feature of the case, and I can only attribute it to the irritation caused by the presence of the foreign body being conveyed along the nerves distributed on the mucous lining of the bronchus and trachea, towards the larynx, and so exciting spasmodic action of the muscles which close the glottis.

Last, but not least in point of practical interest, is the unusual situation of the foreign body in this case; for so far as I am aware, there is no case recorded in which a large-sized foreign body has found its way into the left bronchus. Indeed, most writers on the subject speak of the foreign body passing down into the right bronchus, as if it were a constant rule.

As regards the extraction of a foreign body, if discovered under similar circumstances, I should think it, to say the least, exceedingly difficult; for in a child at that age, the trachea and bronchia are so small, as to afford but little room for the use of

forceps, or other extracting instruments. I believe, that the only chance in this case of extracting the foreign body, would have been, (had its situation been discovered), to have loosened the foreign body from its position in the orifice of the bronchial ramification, by means of the flat end of a long probe, so as to allow the air to pass into the portion of lung beyond it, when it would probably have been expelled during expiration. For of course, whilst it remained impacted in the bronchial ramification, it must have caused complete occlusion of that portion of lung to which that division of the left bronchus was distributed.

ARTICLE VI.—*Case of Gravid Uterus passing into the Sac of an Old Inguinal Hernia, in which the Cæsarean Section was performed.* *By* THEOPHILUS FISCHER, M.D.

129, GEORGE STREET,
EDINBURGH, *Dec.* 4, 1841.

DEAR SIR,—I am directed by the Council of the Medico-Chirurgical Society of Edinburgh to request a place in your Journal for the accompanying case of hernia of the gravid uterus, which was read before the Society some years ago, and had been laid aside with the view to its forming part of a volume of Transactions.

It forms an interesting addition to the cases published by yourself in your number for July last. Yours, &c.,

DOUGLAS MACLAGAN, M.D. Edin.,
Secretary.

Dr Cormack.

On the 12th October 1832, Magdalene Münger, 44 years of age, from Wohlen, living in the parish of Kœnitz, was taken as an urgent case to the surgical department of the hospital (Insel) at Berne, under the superintendence of Dr Isenschmid, (professor of surgery), in whose absence, at that time, the duties of the institution were conducted by the author of this paper.

Upon examining the patient, it was found that she had had seven children, six girls and one boy. Ten years previous to her marriage she had an inguinal hernia on the right side, which was neglected, she never having worn a truss. In every pregnancy the woman suffered much inconvenience from the hernial tumour, which frequently became very large.

She was now pregnant of her eighth child, and at the sixth month of her pregnancy. The hernia had been incarcerated for several days previous to coming into the hospital, but her suffer-

ings had been subdued by cataplasms of linseed meal and cold applications, by which means the hernia was reduced. After the hernia was reduced, the most severe pains came on suddenly in the whole abdominal region, in the loins and lower extremities; and, during these pains, the impregnated uterus got out of its natural position and protruded through the inguinal ring, covered by the hernial sac. The gravid uterus was easily distinguished, and of an egg-like form, resting upon the thighs to the length of eight inches downwards, and six inches in circumference. The woman, lying upon her back, was free from pain. No menstrual discharge had taken place for six months. On examination per vaginam, the os uteri was found, as is generally the case in pregnancies of six months, only a little retracted, higher and more inclined to the right side. The functions of the bladder and rectum were natural. The abdomen was small, relaxed, and wrinkled. By applying the stethoscope to the lower and anterior part of the tumour, and placing the ear on the orifice of the instrument, regular pulsations were discoverable. From this time the patient never abandoned her bed, always maintaining her position on the back: and in this position she was tranquil, and had no return of pain up to the full period of her pregnancy, although the dimensions of the uterus gradually increased to such a degree that, on the 19th January 1833, it measured 25 inches and two lines in circumference, and in length 22 inches and 10 lines, the circumference at the base being considerably smaller. On the above-mentioned day, at six o'clock in the evening, the woman felt herself unwell; she had pains in her loins and abdomen, and contractions in the uterus; the orifice of the uterus became dilated, and, between six and seven o'clock, the waters per vaginam escaped, upon which the pains increased prodigiously. In consultation, Dr Leuch decided upon performing the Cæsarian section, which he performed about nine the same evening, in the presence of Professors Isenschmid, Hermann, Emmert, the medical men Nichans, Fischer, and some students.

The woman, placed on her back, Dr Leuch standing on the right side of the patient, formed on the lower half of the tumour a fold of the integuments on the right side, making an incision longitudinally, seven inches in extent. By a second incision he opened the hernial sac, and the fundus of the uterus; the placenta, which adhered at this part, was divided by the same incision, and bled profusely, after the opening into the uterus was enlarged. The membranes were also divided, out of which the remaining part of the waters ran. The operator then introduced his hand, and found a living, healthy, well-formed child, with its head at the fundus of the uterus, and with its feet towards the hernial ring. The funiculus umbilicalis was divided and tied, the placenta detached, and the child given to the care of a nurse.

The wounded uterus bled very much, and retracted itself to at least three-fourths of its former extent. The wound of the integuments was now made clean, and brought together by ligatures. At the lower part an opening was left, to admit of the escape of blood. Upon the incision were placed some straps of adhesive plaster, and compresses of lint, and the whole secured by a spiral bandage lightly. The patient being now made clean, was left to rest. Her countenance was pale and shrunk; on a sudden she had hiccup, and severe pain in her back and loins; her pulse was weak, and she had given to her a draught of Liq. Anod. Miner. Hoffm. Tinct. cinnamon. et Tinct. opii.

Before midnight the bandage was made looser on account of severe pain; and at two hours after, the bandage was removed entirely. A small artery bleeding, shewed itself in the hernial sac, and some coagulated blood was found in the cavity of the uterus and its vicinity. Towards the morning of the 20th of January, the patient was more quiet, but very weak, and ether was given to her. On that day a constant vomiting followed after every thing she took, without distension and sensibility of the abdomen; and with these symptoms the patient died at between three and four o'clock on the morning of the 21st. The *sectio cadaveris* was made thirty hours after death.

The circumference of the tumour, taken horizontally, measured 17 inches; and longitudinally, 21 inches 9 lines, and the base 18 inches 8 lines. In the cavity of the abdomen it was discovered that hemorrhage had taken place from the wounded uterus—the ligature applied to the incision of the hernial sac being found in its proper place. The inguinal ring was so much extended as to admit an open hand to pass through with ease. The hernial sac was above, and to the right, and the uterus below, and to the left part of the ring. The incision in the uterus was found to the right, and in front. The colon was found detached, but lying in the hernial sac, and measuring 12 inches in its outer circle. A small fold of this intestine was found adhering to the inguinal sac posteriorly. The pelvis was large, and well formed.

The infant is still living, and healthy.

ARTICLE VII.—*The Effect of Irrigation upon the Health of Communities in the East Indies.* *By* JOHN BALFOUR, Esq., of the H.E.I.C.S.

The various causes of disease have lately in different countries attracted much attention, but too many medical men are so tinged with theory, that less reliance can be placed on these views than otherwise would be the case.

The following extracts of letters from civil, military, and medical officers in the Honourable Company's service, written merely to state the facts, and without any view to theory of any kind, appear to me worthy of being placed on record, as showing what may, sometimes at least, be the effects of irrigating the ground to any extent in the neighbourhood of a city or station. I may mention, that Hissar and Hansi are naturally of a dry sandy soil, and also that nearly all the cultivation carried on during the cold weather, used to be irrigated by water drawn from wells, before the opening of the canal alluded to in the subsequent letters, and was of course much more confined; and also that many stations near which the canal ran, did not suffer at all, and a few were only unhealthy for one or two years, subsequently regaining, without any remedial measures, their former health.

No. 1.—Extract of a Letter from S. S. BROWN, Esq., Collector of Hissar, to J. METCALFE, Esq., Commissioner, Delhi,—dated 24th May 1841.

"SIR,—I beg to bring to your notice, that the unhealthiness of this place has of late reached such a height, as to incapacitate almost every public officer for the performance of his duties."—"The station has been noted as one of the most unhealthy, if not the most unhealthy, in the Bengal presidency, the immediate cause being unquestionably the malaria produced by irrigation from the canal, &c."

Appended to this was forwarded a list of officers, with their state of health and efficiency, which I subjoin in a collective form.

Three deaths have occurred among the predecessors of those in office. There are now,—

1 life despaired of.
7 quite unfit for work from past or present disease.
11 suffering from ague, but at present fit to attend office.
5 able to attend regularly.

—

24 total.

No. 2.—Memorandum from the Civil Assistant Surgeon.

"HISSAR, 22*d May* 1841.

"The general character of the disease at Hissar has been remittent or intermittent fever, many cases ending in diarrhœa or dysentery, and from frequent relapses, which in almost every instance occurred, so weakened and injured the constitution, that a number sunk from debility. The sickness at present is great, and certainly since August 1840, exceeds that of former years. It has commenced several months earlier this year, in conse-

quence, in my opinion, of the uncertain state of the weather,—nights and mornings exceedingly cold, and days hot, east and south-east winds blowing. I am also of opinion that the canal cultivation being so close to the town, is the principal cause of the fever.

"A. M'ANALLY, Assistant Surgeon."

In consequence of these reports, inquiries were instituted to ascertain,—

1*st*, The salubrity or want of salubrity of Hissar before the opening of the canal.

2*d*, What success had attended the adoption of certain measures at Hansi in 1838, (viz. preventing irrigation within a certain distance of the station,) before which period that station suffered severely from sickness of the same nature as now prevails at Hissar.

3*d*, At what period after the opening of the canal Hansi became unhealthy.

4*th*, How soon after closing the irrigation in the neighbourhood, the good effects became apparent.

The result will be found in the following letters and extracts:—

No. 3.—To J. METCALFE, Esq., Commissioner, Delhi.

"HISSAR, 25*th July* 1841.

"SIR,—I have the honour to acknowledge the receipt of your letter of the 20th instant, and in reply, beg to inform you, from the best information I can procure from some of the oldest inhabitants, that previous to the year 1826, when the canal was first opened, Hissar was as healthy as the neighbouring stations; in fact, sickness was scarcely known here. The first indication of a change occurred in June or July 1827, when cultivation under canal irrigation began to develope itself. The sickness in this year, however, was partial, but it has been getting more severe every season, as the irrigation increases, and there is no doubt that the sickness has materially increased, since the land in the immediate vicinity of the town has been irrigated.

"A. M'ANALLY, Assistant Surgeon."

No. 4.—Extract of a Letter from J. SKINNER, Colonel commanding at Hansi, to J. METCALFE, Esq., Commissioner, Delhi.

"HANSI STATION OFFICE.

"SIR,—In acknowledging the receipt of your letter, No. 2005, of the 20th instant, I have the honour to reply to your several questions as follows:—

"1*st*, Canal irrigation was introduced at Hansi in March 1826.

"2*d*, The sickness made its appearance during the year 1829.

"3*d*, The canal irrigation was discontinued in 1838, in the month of May.

"4*th*, After the canal irrigation had been stopped, in the year 1838, the sickness gradually became less, as the following statement will show, of the number of sick admitted into the hospital of the Hurnairah light infantry battalion, which corps suffered most during the three ensuing years, 1838, 39, and 40.

"During 1838, there were admitted in October, 71 patients.
1839, ... September, 105 do.
1840, ... October, 76 do.

"In the month of November, which is generally considered a healthy month, in the year 1837, before the canal irrigation was stopped, there were no less than 423 men in hospital, consequently the sickness may be said to have ceased the very year after the irrigation was discontinued.[1] I have the honour, &c.

"J. SKINNER, Colonel commanding at Hansi.

"To J. METCALFE, Esq., Commissioner, Delhi."

No. 5.—Extract of a Letter from COLONEL SKINNER, C.B., commanding at Hansi, dated 16th June 1841, to S. S. BROWN, Esq., Collector, Hissar.

"—— I beg to state, that the health of the troops at Hansi has been as good as that of all the neighbouring stations, ever since the measures sanctioned by government for preventing the former insalubrity of the station have been put into effect."—— "During the last two months, the admission of patients into the hospital of the Hurnairah has been considerably greater than usual, but these men have, with very few exceptions, fallen sick at *Hissar*, while performing their monthly tour of duty at that port; each detachment, consisting of a complete company, going out to that station in the beginning of the month in excellent health, and returning at the end with one-third, or even one-half of the men on carts, being quite incapable of carrying their arms, or walking."

No. 6.—Extract of a Letter from S. HOLMES, Esq., Assistant-Surgeon H.L.I.B., to LIEUT. COLEBROOKE, Station Staff, Hansi.

"—— I beg to state, that the sickness which prevailed in the battalion during the year 1840, was trifling, and in my opinion not greater in the sickly months, than that which is observed to exist in corps of the line at the most healthy stations during the same period."——"Only four casualties occurred during the

[1] This paragraph is not very clearly expressed. Colonel Skinner evidently means, that as in November 1837, (a healthy month generally in these provinces,) there were 423 men in the hospital, and that as in the years 1838, 39, 40, the maximum admitted during any month has only been 71, 105, and 76 respectively, the sickness should be considered to have ceased at once.—J. BALFOUR.

year, and these were attributable rather to constitutional causes, than the effects of climate or locality. If I may be allowed to judge from the experience of nearly three years, I have no hesitation in stating, that in my opinion the remedial measures have been completely successful, and Hansi has in consequence regained the salubrity which it formerly enjoyed."

No. 7.—Extract of a Letter from J. H. HAIG, Esq., Assistant Surgeon, 1st Lt. Cavalry, to LIEUT. COLEBROOKE, Station Staff, Hansi,—dated 30th March 1831.

"—— Very little sickness prevailed among the men of the first irregular cavalry, and none of a serious nature during the year 1840."——"No casualties occurred, and, in my opinion, the station is now as healthy as any other in the country."

To the above extracts I shall not append many remarks. In Nos. 1 and 2 is drawn a frightful picture of the sickness at present prevailing in Hissar, confirmed, if that be necessary, by that portion of No. 5, which refers to the health of the troops returning thence after only *one* month's tour of duty.

This sickness commenced at Hissar, and also at Hansi, after the opening of the canal, and the subsequent employment of its water in irrigating the soil. It does not appear to have been severe, or attracted attention, during the ensuing year or two, most likely because the irrigation was less extensive, and not carried so close up to the towns as latterly. It is proved by returns from Hansi, that the irrigation has extended considerably, even during the last year.

It was first taken notice of at Hissar. This being a large military station, any great change in the admissions into hospital were certain to attract attention, and cause explanations to be called for; while Hansi being a purely civil station, less attention appears to have been paid to the increasing sickness, (though so great as to give it the unenviable character of "*one of the most unhealthy stations, if not the most unhealthy, in the Bengal presidency,*") until the collector and magistrate found it perfectly impossible to carry out the duties of his office, from the number of officers laid up.

The remedial measure employed at Hissar, was, forbidding all irrigation within a certain distance of the station; and this appears, by extracts Nos. 4, 6, and 7, to have been immediately successful in checking the extraordinary sickness.

Hansi is to be treated in the same way; all cultivation (by irrigation) is to be stopped within a mile of the station. It is not, I think, too much to expect, that the result will be favourable. At all events, the experiment is a most interesting one.

AGRA, 15*th Sept.* 1841.

ARTICLE VIII.—*Case of Aneurism of the Arch of the Aorta pressing upon the left bronchus, and annihilating the ordinary physical indications of pneumonia: with Remarks.* By ROBERT SPITTAL, F.R.S.E., *Fellow of the Royal College of Physicians, and Physician to the Royal Infirmary of Edinburgh.*

The subject of the following observations, a gentleman of the legal profession, aged 47, unmarried, and somewhat irregular in his habits, had for several recent winters suffered from bronchitis. During these attacks he took very little care of himself; and, in the winter of 1839–40, the disease assumed a chronic form, and continued varying in severity according to the state of the weather, or the attention he bestowed upon himself, until the period of his death, which took place early in December 1840.

Not having visited the patient, professionally, since May 3d of the same year,—the catarrhal affection having become abated as the summer progressed,—I was again requested to see him on the 18th October. From this period, the case assumed a new and complex character, full of pathological interest; while, at the same time, the risk of life was greatly increased. On examination of the thorax, a tumour or fullness was observed a little above the centre of the sternum, in the mesial line. The elevated portion measured between two and three inches in diameter, and was of a rounded form, somewhat conical in appearance, although the extreme degree of elevation did not appear to exceed half an inch. The sternum was distinctly perceptible across even the apex of the tumour, and continued to be so until the fatal termination of the case; while the integuments over the latter, at first of a normal appearance, subsequently became reddened, especially at the apex, presenting very much the aspect of the skin over a pointing abscess.

There was a considerable heaving impulse in, and around, the tumour; and the sound of percussion over the latter was dull; as was also the case to the left, to nearly two-thirds of the clavicle, from its sternal extremity; the dullness likewise extending down below the second rib of the same side. Very little impulse, however, was perceptible in the subclavicular region. The respiratory murmur was absent, where the percussion was dull; but distinctly audible over other parts of the left side of the chest; frequently however mixed with catarrhal *râles*, chiefly of a mucous character, and which had always been more or less present, in this situation, during former examinations. The sound of percussion over the chest, with the exception mentioned, was normal; and the respiratory sounds on the right side were pure, and somewhat increased in intensity. At this time, also, frequent

cough, with yellowish, tenacious expectoration, especially troublesome at bedtime, and accompanied with slight acceleration of the breathing, formed a progressively increasing source of much annoyance to the patient.

These indications continued much the same until the 15th November, when the catarrh became more severe, accompanied with slight febrile action, and short and frequent breathing; and the respiratory murmur, at the same time, was observed to be feeble on the left side whenever heard; still inaudible in the region of the tumour, as before detailed,—puerile over the right side,—while the tracheal respiratory sound had slightly assumed a stridulous character, and dysphagia had begun to manifest itself.

No farther particular change took place in the symptoms until the 20th November, when, after unwarrantable exposure to cold in the open air, and exertion in his professional avocations, the right lung also became affected with bronchitis. From this period to the 26th, the pulse varied from about 90 to 100, and was of good strength. On the latter date, however, having seen the patient in his ordinary state in the early part of the day, I was sent for about 10 P.M., when I found him labouring under a very considerable aggravation of all his symptoms. The pulse had risen to 120, and of increased strength,—the skin was alternately hot and dry, or covered with a very profuse perspiration,—respirations 40 in the minute,—catarrhal *râles*, chiefly mucous, were observed to have increased in the right lung, while scarcely any respiratory sound was perceptible over the left, and then only on coughing, or on forcible respiration, catarrhal in its character, and evidently only in the large air tubes.

Œdema of the feet and ancles, together with lividity of the face, and slight apparent protusion of the eyes, now began to complicate the case; while the patient became unable to maintain the horizontal position, except for a very short period, and always with most ease in the morning.

After the exhibition of antimonials, and the free application of blisters, slight relief was obtained. The respirations diminished to 32, and the pulse on the 27th fell to 112, and softer; but the lividity and œdema continued as before. On the 28th there was still much mucous *râle* generally, over the right side of the thorax; with increase of cough, and much thin frothy mucous expectoration; while the left continued as before. On the 29th the respirations fell to 28,—pulse 112, rather stronger and fuller, with less lividity of the face; and for several days he had little and disturbed sleep. On the 30th the dyspnœa increased,—pulse became more rapid and feeble, in spite of stimulants,—face, and upper part of the trunk of a slightly livid aspect—increase of œdema of lower extremities, and he gradually sank, and died early on the morning of December 1, 1840, having been unable

to assume the horizontal posture for several days previously. The sounds perceived in the region of the tumour were similar to those in the precordial region—which were of the normal character—except on one or two occasions during the earlier part of my attendance, when a short and sharp murmur was heard, synchronous with the first sound of the heart, a little below and to the left of the external tumour or elevation. The patient thinks he observed the commencement of the tumour about half a year before the period at which he called my attention to it. He likewise stated, that, about two years ago, he had an acute "cutting" pain, as he termed it, under the sternum, but had had little or none since.

The treatment, apart from that applicable to the acute pulmonary attacks, was directed to the alleviation of the symptoms arising from the aneurism, and especially with a view to hindering as much as possible its increase. For this purpose, the ordinary means of rest, both mental and physical, were enjoined; with, at the same time, absence from all unusual stimuli; and a very moderate diet was ordered. Some of these measures, especially the former, were not very strictly adhered to; nevertheless the tumour did not make any advance externally, but appeared rather to have diminished, as was also the opinion of the patient.

Sectio cadaveris.—On examination of the body, 36 hours after death, the following appearances were observed,—a large sacculated aneurism was found to arise from the anterior and a little to the left side of the ascending aorta, about an inch above the semilunar valves; involving likewise the whole of the lower and anterior portion of the arch, which was very much dilated. The tumour admitted easily the doubled hand, and projected considerably to the left side, though not to the extent indicated by the dull sound on percussion during life; but the tumour was flaccid, containing only a small portion of recently coagulated blood. The aneurism extended from the upper part of the sternum to that portion of it nearly in a line with the cartilages of the third ribs; the sac was firmly adherent to the edge of the sternum throughout the whole length and breadth of the portion described, the latter having served as part of the anterior parietes of the tumour. At several places the bone was quite exposed internally; at some hollowed out and quite diaphanous, especially at the upper part and left side, near to the sterno-clavicular articulation, and at the lowest part of the sternum affected, where, in consequence of this, the latter broke through on raising the bone in the usual manner during the examination.

The interior of the tumour was quite irregular from rounded elevations, the normal structure of the artery becoming obscured or lost immediately at the commencement of the dilatation. At the posterior and upper portion of the arch the normal struc-

ture of the vessel was less indistinctly observed, having, though not to the same extent as in the walls of the sac, an irregular appearance. The great vessels arising from the dilated arch were all pervious; at their origin from the aorta, however, they were somewhat thickened in an irregular manner, and were of a reddish colour; and this affection was more or less present in the aorta and great vessels of the neck generally. The portion of the aorta occupied by, or involved in the tumour, terminated at the descending portion of the aorta.

The tumour contained numerous layers of fibrine of a pale ash colour, varying in hue, and not unlike some limestone depositions familiar to the mineralogist. About one-third of the sac,—that most out of the current of the blood on its way to the descending aorta,—was occupied in this manner. The coagulated mass was dense, and adhered tolerably firmly to the parietes of the sac.

The left ventricle was slightly dilated and hypertrophied, the aortic valves were a little thickened at their attachments and edges, the mitral valve was normal, with the exception of a few yellowish patches on its larger or aortic segment.

The right lung had its air-tubes loaded with mucus of a thin and frothy character, and was slightly emphysematous. The left lung again, presented the various stages of the well-marked results of pneumonia. Its upper third was in a state of sanguineous engorgment; the lower portions in a state of red hepatization, insensibly passing into purulent infiltration towards the base of lung, where also there existed several abscesses filled with a reddish-brown purulent fluid; around these the lung was hepatized. Immediately below the bifurcation of the trachea, five of the cartilaginous segments of the left bronchus were more or less completely exposed, and this great bronchial division was somewhat flattened in its appearance. No tubercles existed in either of the lungs. There was some serous effusion in both sides of the thorax.

Remarks.—The above case is interesting in several particulars to which the attention of the pathologist may be directed with advantage. The commencement of the aneurism may, perhaps, be dated from the period when he perceived the "cutting" pain which has been alluded to; and although no indication of its existence was observed by me until about six weeks previous to his death, it is proper to state that, on visiting him, at the commencement of this period, he at once not only informed me of his too well founded suspicions, that he laboured under aneurism of the aorta, in support of which, he laid before me the evidence contained in a paragraph under this head in a popular dictionary,—but at the same time stated, that for several months past he had suspected the presence of this disease, chiefly from the unusual "beating" he felt in the region of the tumour, an indication

which was set forth as one of the chief symptoms in the article he had been perusing; he also stated that he had observed some degree of the external swelling about the period mentioned, which had continued gradually, but slowly, to increase, with scarcely any pain or uneasiness. From the first, no doubt presented itself as to the nature of the disease, an opinion which became more and more confirmed, and supported by subsequent events. The progress of the tumour internally, where alone it extended, was clearly manifested in the occurrence of pressure on the neighbouring parts; involving the œsophagus, blood-vessels, nerves, and great air-tube on the left side of the thorax and neck; as proved by the dysphagia, lividity of face and upper part of trunk, and œdema, dyspnœa, and the progressive diminution of the respiratory sounds over the left lung,—together with the stridulous character of the tracheal respiratory murmur proving the contraction of the trachea to a certain extent,—while, in the progress of the case, the left bronchus became completely blocked up, and all but perforated by the pointed pressure of the tumour in this direction; and it seems evident, that had the patient lived, the aneurism would have burst into the left great division of the trachea. As it was, the patient sank under the combined effects of obstruction to the respiration and circulation directly from mechanical pressure,[1] together with the effects consequent on the morbid state of the lungs described.

Perhaps the most interesting point to the semeiologist, is the impediment which the mechanical obstruction of all respiration in the left lung placed in the way of the ordinary means of diagnosis,—*denying us altogether the aid of those indications of a respiratory and vocal character*, and limiting us to those afforded by percussion and the general indications; and on referring to my notes, I find that the sound on percussion posteriorly was, three days previous to death, "pretty good on both sides of thorax;" so that it is fair to conclude that hepatization had not occurred to any great extent at this time. That the pneumonia, however, had commenced at an earlier period, is highly probable, if not certain, from the indications of fever, of an inflammatory character, which took place on the 26th November, five days previous to death, together with the advanced progress of the affection observed on examination of the lung after death. The total absence also of the characteristic sputa, formed an additional bar to the diagnosis of the inflammatory condition of the left lung.

The two sounds, similar to those of the heart, perceived in the

[1] The aneurism must, from its position during life, have pressed upon the vena innominata and left jugular,—also on the descending cava to some extent,—and on the left pulmonary vessels, hindering somewhat the free passage of the blood in these, and thus accounting for many of the symptoms and appearances.

region of the tumour, as well as the all but complete absence of any morbid *bruit*, corroborate the observations of previous investigators, that aneurisms, in the situation described, with large communication with the aorta, rarely give rise to morbid murmurs, single or double, and this especially when the tumour commences in a gradual dilatation of the vessel. In such cases, the sounds, which are louder in the region of the arch of the aorta than in a normal condition of the parts, owe their increase, there is little doubt, to the altered force of the blood, and dimensions and elasticity of the containing parts. For example, according to Dr Williams, in his recent excellent work on the "Pathology and Diagnosis of Diseases of the Chest," &c.: "The aorta, thus dilated, and wanting its proper regulating elasticity, receives the contents of the ventricle with more abruptness than usual; this circumstance, with the greater size of the vessel, increases the force and loudness of the pulsations at the upper part of the sternum."[1] Something more, however, it appears to me, is necessary to be taken into account, in order to arrive at a satisfactory explanation of the phenomenon, than this view of the subject, that the first sound is "exaggerated," merely "by the impulse of the blood against the dilated walls of the artery."[2] In the conditions described, and in accordance with several experiments and observations detailed elsewhere,[3] I cannot but agree with the observations of my colleague, Dr Henderson, "that the stroke of the expanding sac against the sternum or ribs, or the sudden infringement of the wave of blood against these solid parts, affords a very probable explanation of the phenomenon—at all events, such actions are perfectly adequate to produce such a sound."[4] In the experiments alluded to, it was observed, that no impulse, even of a gentle character, could be made against any, especially a bony part of the chest, from within, as well in air as under water, without giving rise to a sound of an analogous character; and to this explanation I claim the support of Dr Williams, who, though very properly hostile to the exclusive view advocated by Magendie, that the stroke of the heart against the chest is the sole cause of the sounds of the latter, admits, nevertheless, "that in forcible pulsation, and when the lung does not too much intervene, he has no doubt that the impulse does produce sound; and if we listen to the sound of the heart when it is beating strongly, or when, by leaning forward or by breathing out, the heart is brought in contact with the walls of the chest, we hear the first sound has some-

[1] 1840. P. 284. [2] Ibid.

[3] Experiments and Observations on the Sounds of the Heart. Ed. Med. and Surg. Journ., No. 128, 1836. By the author.

[4] Ibid. vol. xlv., 1836. On Substernal Aneurisms.

thing like a knock in it, which we can *scarcely help referring to the impulse.*"[1] If, then, these facts be admitted in regard to the heart, the same views cannot be denied to the explanation of the inordinate aortic or aneurismal, but pure heart sound, and in this I believe Dr W. will concur.

As to the morbid sound heard on one or two occasions early in my attendance, and which was of a "whizzing" character, short, and by no means loud, this may have arisen from the vibration caused by the current of blood from the ascending aorta, passing into the aneurism, immediately at the commencement of which, from the left side of former, there was an abrupt edge formed by the angle of junction of the sound aorta and tumour. The feebleness and subsequent absence of the murmur, may be accounted for, partly by the large size of the communication with the tumour, as above alluded to, and perhaps its progressive enlargement; although there is no doubt that the comparative rest, both mental and physical, together with the absence of many accustomed stimuli, aided perhaps by the fibrinous deposition in the tumour, may also, to a great extent, assist us in explaining this occurrence. The murmur, in this case, may be regarded as a mere vestige of an important diagnostic indication perceived in aneurisms, in which the communication with the aorta is narrow and abrupt, and in which case there is sometimes not only a murmur synchronous with the contraction of the ventricles, but also another synchronous with their dilatation, or, what is next to the same thing, with the dilatation and subsidence of the aneurism. This, however, is rare; nevertheless both Dr Hope,[2] (whose untimely death all must deplore,) and Dr Williams,[3] who has not met with a case of this nature, admit the possibility of such an occurrence; and in a case published by Dr Henderson, which I had several opportunities of examining along with him and Professor Fergusson, the double murmur from this cause was very distinctly marked.[4]

The second heart sound perceived in aneurisms about the arch of the aorta, is generally admitted to arise from mere transmission from the ordinary site of its origin in the semilunar valves, augmented, it may be, by reason of the aneurism affording a better medium of conduction of sound than the aorta in its normal state, not close to the sternum, and often covered by a portion of pulmonary tissue. And there is little reason to doubt that the first sound must also to a certain extent owe some degree of augmentation in its intensity, to transmission from the original site of the first sound of the heart, wherever this may be found to arise.

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[1] Op. cit. p. 205.
[2] On Diseases of the Heart, &c., 3d ed., 1839, p. 443.
[3] Op. cit. p. 286.
[4] Ed. Med. and Surg. Journ., vol. xlv. 1836, p. 314.

PART SECOND.

REVIEWS.

New Remedies: the Method of Preparing and Administering them, their Effects on the Healthy and Diseased Economy, &c. By ROBLEY DUNGLISON, M.D., *Professor of the Institutes of Medicine and Materia Medica in Jefferson Medical College of Philadelphia, &c.* 8vo. pp. 503. Philadelphia, 1839.

THE title of this book led us to hope, not only that it would give an account of the more recent additions to the materia medica, and of their supposed physiological and therapeutical actions, but also that from it we might be able to profit somewhat by the experience of our transatlantic brethren, in the use of some of the many "new remedies" which have of late years been brought under the notice of the profession. In regard to the former point, we must admit, that Dr Dunglison has evinced a very considerable amount of diligence and zeal, in having collected a vast body of what are commonly called medical *facts;* but along with this diligence and zeal, there is a very great lack of judgment in the selection. In his preface, he tells us that he "has thought proper to give, so far as he was able, the recorded experience of all who have employed the remedies in question, owing to the difficulty of sifting the results of true from those of false observation." In continuation, he remarks on the superiority of a rational and inductive cultivation of medicine, over a merely empirical method, admitting, however, that well-substantiated experience in practical medicine, must always be entitled to take precedence of reasoning as to the power of a remedy. "To treat disease methodically and effectively, the nature of the actions of the living tissues, in both the healthy and morbid conditions, must be correctly appreciated; the effects which the articles of the materia medica are capable of producing under both these conditions, must be known from accurate observation, and not till then can the practitioner prescribe, with any well-founded prospect of success." *Preface*, p. iv. "Every one will be compelled to admit, that it is the duty of the correct therapeutist, to doubt the existence of qualities in any article, until they have been adequately proved. When such is the case, no reasoning can set

aside facts; but unless the evidence be overpowering, it is equally his duty to remain in doubt, especially should reflection suggest to him strong grounds for believing that the number of observations has been insufficient,—that they have not been properly made, or are inconsequential." "To enable the profession to form an accurate estimate of the value of remedies of more recent introduction, or of the older remedies, whose use has been revived under novel applications, the present volume was undertaken by the author." *Preface*, pp. vii. and viii. These remarks are in themselves good, and would be appropriate were they appended to any other work than the present. But the author seems to have forgotten these ideas when engaged in the work of compilation, or rather in writing his preface, which we presume, like most prefaces, was the last part written, has forgotten the character of much that his book contained. A great proportion of what he has collected, consists merely of isolated statements regarding uses, often *prima facie* inconsequential, to which various agents have been applied, unsupported by any "overwhelming evidence," and therefore totally inadequate to lead to any "accurate estimate" of the powers of the remedies. It would be easy to make a book twice the size of Dr Dunglison's, out of the curiosities of medical literature, with which the periodical press teems, but we apprehend, that it would have been much better to have omitted one-half of what is here presented to us,—to have limited the inquiry to a few of the more important agents,—to have subjected these first to the inductive test, by a more ample reference to general physiological and pathological principles,—and then to have presented us, not with a few detached statements, but with good numerical results of cases where the remedy has succeeded entirely, succeeded partially, or totally failed. It is perfectly right that practitioners should communicate to the periodicals of the day new or remarkable applications of remedies, but it is not worth while collecting these, and making a book of them, until they have been tested by the experience of several persons.

In our expectation of some account of the experience of new remedies in the hands of American physicians, we have been entirely disappointed. The quotations of American experience are few and far between, and are for the most part unimportant. In fact, the book seems chiefly calculated to let the Americans know what has been going on in the medical world on this side of the Atlantic. The quotations are chiefly from continental journals and books, and occasionally from English authors, and constant reference is made to the treatise of Dr Riecke of Stuttgart[1] on

[1] Die Neuern Arzneimittel, u. s. v. von V. A. Riecke. Stuttgart, 1837.

new remedies, and Magendie's Formulary,[1] which works seem to have been the author's model in writing the present book. With respect to Dr Dunglison's general style, we have little to remark. The sententious writing, which of necessity characterises a compiled work like the present, leaves little to be done in the way of mere composition or elegant diction. We must decidedly protest, however, against certain of the strange phrases and words which Dr Dunglison substitutes for some of the ordinary technical terms. Thus, at page 312, and in other places, we find him talking of a medicine having been used in "three cases of gastricism." What this may mean, we cannot very well say. It cannot signify abdominal affections generally, for peritonitis is specified in a subsequent clause of the same sentence. It is a very bad substitute for "gastritis," if this is what is meant to be signified by it, for the Latin termination *itis* is universally known to indicate an inflammatory affection. It may perhaps correspond to the absurd French word *gastricité*, which we are told in the Dictionnaire de Médecine, is expressive of "*embarras gastrique*;" it certainly is not an English word, at least we cannot find it in Good's Study of Medicine, in the Cyclopedia of Practical Medicine, or Johnson's English Dictionary; we rather suspect that it is one of those singular phraseological monsters, with which, by a kind of verbal superfœtation, our transatlantic friends have impregnated the language of their forefathers.[2]

Such are the principal faults which we have to find with Dr Dunglison's book. We return with pleasure to our first statement, that the work evinces great zeal and diligent research on the part of the author, and though we assert that it contains much that is useless, and that there are many glaring omissions and imperfections, we have found in its pages a good deal that is valuable, and for collecting which, Dr Dunglison deserves well of the profession. We would exhaust the patience of our readers, by specifying all the subjects treated of by our author; we propose, therefore, to select a few of the more important and interesting of his topics, and to offer some remarks on them.

The first article in Dr Dunglison's list, which is arranged alphabetically, is *hydrocyanic acid*. For the preparation of this medicine, he gives three formulæ,—that of Scheele, now entirely abandoned for practical purposes,—that of Gay Lussac, for preparing the anhydrous acid,—and that of Vauquelin, for obtaining a diluted acid, by the action of sulphuretted hydrogen on bicyanide of mercury. It is not a little singular, that our author makes no allusion to the process of Geiger, by the action of sul-

[1] Formulaire pour la Préparation et l'Emploi de plusieurs Nouveaux Médicamens. 8me edit. Paris, 1835.

[2] This word (*gastricismus*) is used by the Germans. It ought to be expelled from medical terminology.

phuric acid on prussiate of potassa. It is by far the best for preparing medicinal acid; it had been adopted by the London pharmacopœia of 1836, and Dr Dunglison must have seen it mentioned in Pereira's Elements of Materia Medica,—a work which he quotes in the very pages now under consideration. Another remarkable omission is the want of any allusion to a method of accurately determining the strength of the medicinal acid, although he observes that "it is hardly necessary to say that the physician must be acquainted with the character of the acid he prescribes." There is in the following sentence evidence of confused notions respecting the chemical properties of prussic acid, which seem very strange in a professor of materia medica. In speaking of the mode of administration, he says, "It must also be recollected that the acid loses its strength by keeping. Magendie remarks, that when left to itself in a close vessel, it sometimes becomes decomposed in less than an hour, and that it rarely preserves its integrity for more than a fortnight." Now, all this is quite true with regard to the anhydrous acid, but surely Dr Dunglison does not suppose, that, though there is a formula for its preparation in the French codex, it is ever kept for medicinal purposes. If he means his remarks to apply to the medicinal acid, he is completely in error, for with a very moderate degree of attention, the medicinal acid may be preserved for more than a year.

With regard to the more important question, as to the therapeutical uses of the acid, and its action on the economy, Dr Dunglison gives us a very good abstract of the leading statements which have been made by practical men regarding it. After mentioning the employment of this remedy, by various practitioners, in inflammations, phthisis, hooping-cough, asthmatical affections, neuralgia, nervous disorders, and diseases of the skin, he sums up the evidence by the following observations, which we quote, both as being in accordance with our own opinions, and as being a good average specimen of Dr Dunglison's phraseology and style of writing.

"Such are the principal affections in which the hydrocyanic acid has been used. We have often employed it internally, in many of the cases recommended, especially in painful affections, accompanied by great nervous impressibility, and in consumption, but have not had sufficient reason to place it high in rank amongst our medicinal agents. We have certainly had no evidence that it can cure consumption when not beyond its first stage, as remarked by Magendie. If the practitioner will bear in mind the effects which the acid is capable of producing upon healthy man, when carried to the requisite extent, he will have no difficulty of deciding upon the cases in which its agency may be appropriate. If not a true sedative, it is the nearest approach to one, and therefore its employment is clearly indicated in diseases where there is much erithism, administered alone, or along with other agents of the same class."

We pass over a host of subjects, including, amongst others,

lactic acid, hydrocyanic ether, preparations of silver, preparations of gold, and acupuncture. The chapter on the last-mentioned topic contains a fair summary of what has been observed of the action of acupuncture, since its comparatively recent revival in Europe. At page 115, we have an account of the remedial uses of animal charcoal, which we shall indulge the curiosity of our readers by quoting. In his introductory remarks on this substance, Dr Dunglison, after alluding to the former employment in Germany of burned hedgehogs, hares, moles, and shoe-soles, which he justly regards as relics of ancient ignorance and superstition, now properly fallen into oblivion with the profession, and after mentioning burned sponge, the virtues of which were most probably due to the iodine which it contains, says,—"These were perhaps the only forms in which animal charcoal was used at the time when Weise, a German physician, revived its employment; and many physicians soon came forward to attest favourably in regard to it." Exactly so,—and scarcely a year elapses without the same thing occurring with respect to a dozen different substances, especially if they are employed in the treatment of obscure and chronic complaints. Let a new remedy be but well puffed in one quarter, and testimonials in its favour are sure to pour in for a while in every direction. The effects of dietetic and general hygienic treatment, are left out of consideration altogether. The drug is the thing. It is a humiliating confession, but we believe it must be owned, that from want of a little reflection and sound induction on the part of medical men, it is just as common in our profession, to see physicians following each other in praise of a remedy of little or no real value, as it is in a Cheviot farm to see a string of sheep rush in at a gate, and make prodigious leaps over nothing, because one lanigerous leader has selected this particular route, or chosen to display similar saltatorial agility. Our readers, however, may be curious to know what these German physicians have to attest in favour of *animal charcoal.*

"In the case of a young man of scrofulous diathesis, Weize saw a tumour of the size of a hazel-nut, and very painful, situate under the nipple, disappear under the use of animal charcoal. According to him, its efficacy is strongly exerted on the uterus and mammæ. Rothamel and Hohnbaum extol it in dyspepsia and gastricism, as well as in cases of diarrhœa. In obstinate chronic glandular indurations, especially of the mammary glands, Weise affirms it to be a certain remedy; he, at the same time, however, considers a regulated diet to be indispensable. Scirrhus of the lips, he says, also disappears under its use, and even schirrhous goître when the charcoal is associated with burnt sponge. On cartilaginous polypi, it is said to have exerted a beneficial agency, and to have diminished the tendency of mucous polypi to return after operation. Even open cancer, it is asserted, has been healed by it. On these recommendations of Weise, animal charcoal has been used by several German physicians, especially by Wagner, Kopp, Pitschaft, Radius, Rothamel, Hesselbach, Gumpert, Hohnbaum, Fricke, Michaelsen, and Siebenhaar; and as a general result of their observations, it would seem not to

be devoid of therapeutical agency; although many of the experimenters failed in noticing any sanative effect from it. Fricke, for example, did not observe the least benefit in the very cases mentioned by Weise. He gave it also in the way of experiment, in several other cases, but without detecting the slightest influence on the organism. Other physicians saw advantages from its use in open cancer, but these were only transient. On the other hand, the experience of Wagner, Kopp, Michaelsen, and Rothamel would seem to show, that it was effectual in removing incipient scirrhus of the mammæ. Kopp employed it successfully in scirrhous goitre, and Pitschaft in a case of what he terms *struma varicosa*. Radius dispersed under its use a considerable swelling of the submaxillary glands. In scrofulous affections, especially in scrofulous indurations of the glands, it proved useful in the hands of Kopp, Rothamel, and Speranza. Pitschaft, in a delicate, strumous woman, who was suffering constantly under ozæna, found it of eminent service after other remedies had failed. Radius thought it aided the absorption of a disintegrated cataract, and Siebenhaar saw good effects from it in induration of the pancreas." P. 115.

This is pretty fair for any remedy, but especially for an insoluble and inert substance, such as carbon is, whether derived from "ribs of veal," which Weise recommends for its manufacture, or from vegetable matters. We have a great respect for animal charcoal. The whiteness of our salts of morphia and quinine attest its value as a pharmaceutical agent; but we lack faith to extend our confidence to its therapeutic powers. We expected on turning over the page in which Dr Dunglison has recorded the above, to find him protesting strongly against any credence being given to these externals; but all we find him saying on the subject is the following:

"Riecke suggests, that further trials might show that it might be used in the place of iodine, which it appears to resemble in its action on the economy, whilst it affects the organism less injuriously. It is extremely doubtful, however, whether the properties of the two substances can be regarded as at all analogous, and whether the charcoal is possessed of any other properties than those usually ascribed to the prepared charcoal." P. 115.

Our readers will see from this that Dr Dunglison's "New Remedies" evinces somewhat of a tendency to book-making. It is by quoting such statements as these, and eking them out with formulæ for powders and boluses, that he has swelled this compilation into an octavo of 500 pages, which would have been twice as well worth its price had it been one-half smaller.

We have thus freely pointed out and exemplified the defects which have forced themselves on our observation, in the perusal of Dr Dunglison's work. We would be very far, however, from wishing our readers to suppose, that we can extract no better samples than the above, from the mass of matter which he has collected. In this volume there is much which will both interest and instruct. We have, however, some difficulty in selecting passages for quotation, because the greater part of it is made up of information derived from European books and journals, the most important parts of which are already known to the pro-

fession. We have selected, however, one or two passages, which, though not striking for their novelty or originality, are, we think, interesting.

The following are some of the remarks which our author has collected on the subject of *acupuncture:*

"We have already alluded to the impunity with which, in the generality of cases, acupuncturation may be practised even on important organs.

"As respects the nerves, Cloquet has seldom or never seen the puncture of them give rise to so much pain as to render it necessary to withdraw the needles; the pain was generally trifling, and speedily passed away. He inserted needles into the brain and spinal marrow, and into the crural nerve of a cat, without any evidence of severe suffering, or of change of function. Similar experiments were made by E. Gräfe with the same results.

"Nor was inconvenience found by Delaunay, Béclard, and Cloquet to be sustained on puncturing the arteries and veins. A few drops of blood perhaps issued, and the flow was readily stopped by pressure with the finger. The slight ecchymosis, which at times supervened, disappeared rapidly of itself. In Gräfe's experiments, he never found much bleeding to ensue, although he properly esteemed it advisable to keep clear of the nerves and blood-vessels, in order to avoid any unnecessary pain or mischief.

"As regards the fasciæ and periosteum, Gräfe found that the insertion of needles into them was always very painful, and he recommends, therefore, that the operation should be performed with care on those parts. Should, however, the needles be introduced, and much pain be experienced, it rapidly ceases when they are withdrawn. . . .

"The pain occasioned by acupuncturation is generally easily tolerated, but at times it is so violent, that the patients cry out; the violence, however, usually passes away, either when the needle is drawn out, or forced in deeper. It would seem that the operation is, as a general rule, most successful when it occasions the least pain. Cloquet asserts, that a kind of electric shock is sometimes experienced in the surrounding parts at the moment of the introduction of the needle; in other cases, a tremulous motion is observable in the fibres of the muscles penetrated. Almost always, some time after the entrance of the needles, a more or less regular areola or halo of a red colour, and without tumefaction, is perceptible around the needles, which soon disappears after they are withdrawn; but when they are suffered to remain long in the part, it may persist for hours.

"When the operation is productive of benefit, relief is speedily experienced.

"The extraction of the steel needles is ordinarily accompanied by more pain than their insertion, especially if they have penetrated deeply, and been retained in the flesh for a long time. The difficulty is owing to their having become oxidised, and consequently rough on the surface. In withdrawing them, it is advisable to give them a movement of rotation, and at the same time to press upon the skin surrounding them with the thumb and index finger. . .

"As to the *modus operandi* of acupuncturation, we cannot conceive its effects to be any thing more than the new nervous impression, produced by the needle in the parts which it penetrates. The needles having been found oxidised, especially at the point, it has been supposed by some that the oxidation is connected with the remedial agency; and it has been even affirmed, that in some diseases they oxidise more readily than in others. It is a sufficient reply to this view, that beneficial results are obtained from the use of needles made of metals that do not become oxidised, and that the steel needles oxidise in the sound as well as in the diseased body, and even in parts that have been removed from the body, and placed in warm water; for in the cold dead body, it is affirmed, the phenomenon is not observed.

Cloquet and Pelletan think, from their experiments, that the effects of acupuncturation are a consequence of the development of the nervous fluid—which they liken to the galvanic—around the needles; a view which is denied by Pouillet and Béclard, but adopted in a modified form by Dr Bache, who throws out the conjecture, 'that in many cases of local pain this accumulation of the nervous (electrical) fluid depends upon the altered state of the various fasciæ or condensed sheets of tissue, giving them the power, to a certain extent, of insulating the parts which they serve to embrace.' The explanation is ingenious, but we do not think it necessary, if adequate, to explain the phenomena. We have no doubt, that the effects are owing to a concentration of the nervous power towards the part transfixed by the needle, so that a derivation of the nervous influx is induced towards the seat of pain, or towards the nerves particularly concerned in the production of the pain; but further than this we know not.

"There is one phenomenon, by the way, which is dependent on the oxidation of the needle. When the free extremity of an inserted needle is connected with the ground by means of a conducting substance, or is put in connection with a soft part of the patient's body, it becomes the seat of a galvanic current, which is exhibited by the multiplier of Schweiger. That this phenomenon is dependent upon the oxidation of the metal, is proved by the circumstance, that it does not take place when an unoxidable metal is employed." Pp. 30—32.

Somewhat connected with this is the practice of *electro-puncture*, of which Dr Dunglison gives a fair summary.

"This consists in a union of acupuncturation with electricity. The idea of the conjunction appears to have originated with Berlioz; but Sarlandière was doubtless the first who put it in practice, although J. Cloquet has contested the priority with him—a matter, by the way, as in all such cases, of extremely small moment. The operation consists in employing acupuncturation in the usual way, either with a single needle, or with two or more, and making a communication between them and the prime conductor of an electrical machine; or they may be made to form part of the circuit in the discharge of a Leyden jar. In this way, the electrical influence may be graduated from the simple aura to a full shock. Sarlandière appears to have employed electropuncture with great success; but he restricts its use to rheumatic or neuralgic pains, uncomplicated with organic mischief or inflammation; when such complications exist, he advises blood-letting and general antiphlogistics to be premised.

"Guersent thinks it better, in all these cases, to use simple acupuncturation, and only to employ electropuncture, when the first proves to be inadequate, as in paralysis, and in tremors produced by the immoderate use of mercury; in all cases, indeed, in which the malady depends on a diminution of the nervous energy. A case of success from its use, in paralysis of the right arm, in which voluntary motion and sensibility were destroyed, has been published. (*Lancette Française, Dec.* 20, 1836.) . . .

"Magendie affirms, that he has treated many cases of incomplete amaurosis with great success by this agency. He employed it, however, in the form of what has been more properly termed galvanopuncture,—by fixing a needle in the frontal nerve, and another in the superior maxillary, and making these communicate respectively with the poles of a galvanic pile of twelve pairs of plates, each six inches square. Whenever the contact was made, the patient experienced a painful commotion in the course of the nerves, and at the bottom of the orbit; the light became better appreciated, and the pupil contracted. . . .

"M. Leroy d'Etioles has suggested galvanopuncture, in cases of asphyxia, in a manner which, at the first aspect, appears most formidable; but which is really less so than it seems to be, in consequence of the impunity with

which fine needles can be made to penetrate, as we have seen, even the most important organs. He introduced an acupuncture needle on each side between the eighth and ninth rib, until it reached the fibres of the diaphragm. He then established a galvanic current between the needles, by means of a pile of twenty-five or thirty pairs of plates, an inch in diameter. The diaphragm immediately contracted, and an inspiration was accomplished. He then interrupted the circle, when the diaphragm, urged by the weight of the abdominal viscera, and aided by gentle pressure made on the abdomen by the hand, returned to its former position, and an expiration was effected. In this way, the two respiratory acts were made to succeed each other, and regular respiration was reinduced. A continuous current was likewise employed in some cases, but the respiratory movements were irregular, and nothing like natural respiration resulted.

"Leroy tried his method on animals asphyxied by submersion, and when they had not been under water more than five minutes, they were often restored.

"These experiments were witnessed by Magendie. On different occasions, M. Leroy asphyxied animals of the same kind, and apparently of the same strength, and whilst those that were left to themselves perished, those that were treated by galvanism recovered.

"As an aid, therefore, to pulmonary insufflation, and an important one, galvanism, combined or not with acupuncturation, might be advantageously employed in asphyxia, but as has been already remarked, it can rarely be available. Certainly no time should be lost in adopting the other energetic and indispensable measures that are demanded. It has been recommended, that as only a very small apparatus is necessary, batteries, consisting of a few plates, might be kept wherever there are station-houses for the reception of persons in a state of asphyxia. The suggestion is good; and they might also with propriety form a part of the cabinet of apparatus of the private practitioner; but whilst an assistant is preparing an apparatus for action, the practitioner should be assiduously engaged in applying other means of resuscitation." Pp. 193—196.

The article on *iodine* is long and elaborate, and contains a very full, and we think fair account of the manifold uses to which this substance has been applied. We would remark, that in our opinion, too much importance has been attached by Dr Dunglison and the various authors he has quoted, to the external application of iodide of potassium. The mere external application of this compound has seldom in our experience produced very decided beneficial effects; whilst its internal administration, especially in secondary syphilis and scrofulous abscesses, has proved of the highest value. We were formerly accustomed to give it in the form of solution containing free iodine; but this we have of late abandoned, both because we have succeeded equally well with the simple solution of the iodine, and because the taste of the ioduretted solution is repugnant to most patients.

We have room only for one more extract from Dr Dunglison's work, in which we shall introduce to our readers the *volatile oil of mustard*, which we have long thought might be more extensively employed as a convenient and manageable counter-irritant.

This volatile oil is readily obtained by distilling mustard flour with water. It is of a yellowish white colour, and exhales so

strong a smell of mustard, that the attempt to test its odour, instantaneously excites a violent pungent sensation in the nose, and tears in the eyes. Its acridity is so great, that in the pure form it immediately occasions a sense of burning, followed by intense redness and vesication, on the parts with which it comes in contact.

"Mustard-seed oil may be applied either externally or internally. For the first object, Dr Meyer advises a solution in rectified spirit (twenty-four drops to the ounce), or in oil of almonds (five or six drops to the drachm of oil of almonds.) In Berlin, the first of these is used. Even this solution exhales so strongly the characteristic odour of the mustard, that simply smelling it induces a sense of pungency in the nose, as well as tears in the eyes. Owing to the great volatility of this oil, its properties and efficacy are soon lost; and the strength of the spirituous solution becomes less and less, when the fluid is preserved for a long time in vessels that are not accurately closed, or are frequently opened for the administration of the remedy, and afterwards not carefully attended to. It is therefore advisable in practice, that only small quantities should be prescribed at a time, and that these should be kept in well-closed vials, and in a cool place.

"The mode of external administration may be one of two, according to the sensibility of the skin, and the effect it may be desirable to induce. It may consist either in rubbing the liquid on a part of the surface, or in applying strips of linen wetted with the solution. The first method is advisable, where the skin is delicate, as in the case of women and children, and in those whose healthy sensibility has not been diminished, as by paralytic affections. The fluid, when rubbed on the skin, very quickly evaporates, in the course of a few minutes, and excites a vivid sensation of burning, with bright redness of the surface, which disappears in the course of a few hours at the farthest.

"The augmented sensibility produced by friction with the solution of the oil, continues generally for a longer period; and, consequently, if a fresh application be needed at a short interval—say in four to six hours—it must be made on the neighbouring parts, avoiding those first implicated. It is sufficient to use the remedy in this manner two or three times a-day.

"The application of the oil by means of strips of linen, is adapted for skins such as those of men, which are thicker, and less sensible, as well as for morbid cases in which the healthy sensibility has been depressed. The size and shape of the strips must be determined by circumstances. The linen is dipped in the solution, placed upon the prescribed portion of the skin, and suffered to dry, which generally happens in about eight minutes. Burning pain immediately succeeds the application, and is often so insupportable, that the patients object to wait until the linen is dry, and it has to be removed earlier. Besides the more violent pain produced by this mode of applying the oil, the redness of the skin is much greater, and in many cases vesication succeeds." Pp. 346, 347.

The advantages of having the oil in the separate form appear to be, that by proportioning the quantity applied, we can regulate the amount of counter-irritation, according to the circumstances of the case, a result which cannot always be depended on in the use of common mustard cataplasms.

Dr Dunglison casually mentions a fact well known to chemists, which is deserving of note, viz., that acids and some other agents interfere with the development of the oil, when mustard

is moistened with water. It is a popular custom to mix vinegar with mustard in making sinapisms, under the idea of strengthening their action, whereas the very reverse is the case,—less of the oil, on which the irritant properties of mustard depend, is eliminated.

An Examination of a Review contained in the British and Foreign Medical Review, of the Medical and Physiological Commentaries. By the Author, MARTYN PAINE, M.D., A.M., *Professor of the Institutes of Medicine and Materia Medica, in the University of New York.* 8vo. pp. 96. New York, 1841.

To the great benefit of the *post-office*, this production has been profusely circulated by the author, *at the expense of the recipients.* Two copies came to us, for which we had to pay postage from New York, whereas one copy would have perfectly satisfied all the critics who write in this Journal; for, like most of that class, we have a great dislike to the atrabilious temper in which "*examinations of reviews*" are generally written. Assuredly, had this pamphlet of the American Professor been nothing more than its name implies, we would have passed it by in silence, leaving it to be dealt with by our contemporary, to whom medical literature and science are so greatly indebted, as he might see most fitting: but as it substantiates a charge of plagiarism against a writer in the Review to which we allude, and denounces Dr Carpenter, an esteemed contributor to this Journal, as the offender, we feel called upon, in justice to him, to give publicity to the following letters.

"*From Dr W. B. Carpenter of Bristol (England), to Professor Dunglison of Philadelphia, in reference to certain charges made against the former, by Dr Martin Paine, Professor of the Institutes of Medicine in the University of New York, in his 'Examination of Reviews, &c.'*

"BRISTOL, *Nov.* 16, 1841.

"MY DEAR SIR,—Having just received from Dr Paine a copy of his 'Examination' of the critique on his Medical and Physiological Commentaries, which appeared in the April number of the British and Foreign Medical Review, I find, to my great surprise, that Dr P. has thought himself justified,—not only as singling *me* out as the author of it, and in animadverting upon what he considers to be *its* misrepresentations, as if they were *mine* (thereby attempting to make that a matter of personal discussion between us, for which the editor of the Review holds himself responsible),—but also in fixing upon me a charge of literary plagiarism, which is calculated, if I allow it to remain uncontradicted, to do great injury to my personal as well as to my scientific character.

"Before going further, I must express my astonishment, that any person holding the position which Dr Paine occupies, should commit himself to so grave a charge against an individual, to whose discredit he *knows* nothing, upon evidence so flimsy as that which he adduces;—especially as he must

have been aware that, from the distance of the accused party, his defence could not be laid before the public, until many months should have elapsed since its publication, during which time, an injurious impression would have been formed not easily to be eradicated. And I think that I have further a just right to complain, that Dr Paine's inculpation of me is not confined to surmise; but that, after he has proved his point to his own satisfaction, he has taken it for granted, and, throughout the latter part of his pamphlet, has continually coupled my name with the accusation of gross plagiary.

"The evidence which Dr P. adduces in support of the charge, is briefly the following:—Having made up his mind, from certain coincidences of opinion and of expression, between the critique on his Commentaries, and my Principles of Physiology, that I must have been the writer of the former, he has searched in previous numbers of the same Review for articles written, as he imagines, by the same author. In this search he thinks himself assisted by references occasionally made from one article to another,—the complete fallacy of which kind of evidence is exposed in Dr Forbes's letter. Upon the same evidence, I must have been the reviewer of his own work; and I am not certain whether Dr P. does not mean to insinuate as much. Any person, however, who carefully reads that review, which I did not see until it was in print, may find abundant evidence of the absurdity of such an idea. With respect to the other chief source of Dr P.'s evidence,—coincidence in opinion, and in the mode of expressing it,—I will only say that Dr P. shows great ignorance of the state of physiological science in this country, if he imagines that the opinions expressed in my Principles, on the subjects alluded to, are at all peculiar to myself; and it is very natural that one writer should almost unconsciously adopt the phraseology of another who has recently treated of the same questions, when desiring to express the same ideas.

"So much for the evidence on which Dr P.'s charge is founded. I have thus examined it, merely to show how unjustifiable it was in Dr P. to charge me with the perpetration of a gross literary theft, upon no better grounds. The charge itself,—that in a review of Hunter on the Blood, in a former volume of the same Journal, I unceremoniously adapted certain passages from Dr Channing's Essay on Milton, to a very different purpose,—is easily disposed of. *I did not write that review.* To those who know me, my simple denial would, I am confident, be amply sufficient; but for the satisfaction of Dr Paine, who, in his ignorance of my character, may think me as capable of asserting a falsehood, as of stealing a paragraph, I enclose a note from Dr Forbes confirmatory of my assertion.

"Dr Paine considers that his identification of me with the plagiarist is triumphantly confirmed, by a correspondence which he imagines that he has detected, between certain passages in my Principles of Physiology, and others which he has selected from Dr Channing's Sermons. I am myself completely at a loss to discover this correspondence; and my friends here find it equally difficult. The falsity of this charge is as easily proved as that of the other; for *I have never* (I speak it almost with shame) *read the Sermons* from which Dr P. quotes. The ideas which I have expressed, have so long been familiar to my mind, that I cannot imagine that they involve anything peculiarly *Channing-ian.* If any correspondence do exist, it is easily accounted for by the fact, that I received my education from one, who was for many years the respected and attached friend of that illustrious man, and whose mind, cast in the same mould with his, impressed mine with those habits of thought, which have led to whatever similarity may present itself between our published opinions.

"In regard to Dr Paine's criticisms upon the scientific opinions I have expressed in my Principles of Physiology, I shall not now offer any remarks; nor do I intend to take up the gauntlet from an opponent, who has shown himself so destitute of judgment and of good feeling. Of the merits of our respective productions, I am quite content to leave the public to judge.

"Having few means of placing my statement before the medical public of America, save through your mediation, I take the liberty of so far trespassing on your kindness, as to request you to gain insertion for it in such journals, as may give it a circulation equal to that of Dr Paine's calumnious charges against me. Believe me to remain, dear Sir, respectfully and sincerely yours,

"WILLIAM B. CARPENTER."

From Dr Forbes, Editor of the British and Foreign Medical Review, to Dr W. B. Carpenter:

"DEAR CARPENTER,—As I think it would be a piece of silliness, only second to that of writing and publishing the 'Examination,' to attempt any detailed or serious reply to Dr Paine's wordy reclamation, or any justification of the article in the Review to which it refers,—I shall take no notice whatever of his attack, further than relates to the charge of plagiarism. *This is true*, so far as the writer of the review on Hunter is concerned, but *false* as concerns *you*,—since you did not write that review. This I am ready to state to all persons, at all times, as the truth, without any reservation or equivocation. The conduct of the writer of that review, in palming upon the Editor a portion of the writings of another for his own,—if really done intentionally and with a view to deceive (I would fain hope that the fact may admit of some other interpretation), cannot be sufficiently reprobated. Although, as being the first specimen I had had of this person's writing (and, with one trifling exception, the only one I have ever had) I might be forgiven for not suspecting the authenticity of the surreptitious passages, I take shame to myself for being so little acquainted with the eloquent writings of Dr Channing, as not to detect the theft before the MS. left my hands for the press.

"Perhaps when Dr Paine discovers that he is mistaken in the affiliation of this portion of the review, he may feel somewhat less confident of the evidence by which he thinks he has traced the authorship of other articles in it to you. I certainly shall not gratify his curiosity on this point, by either affirming or denying the accuracy of his conclusions; and I do not see any reason why you should.

"It is singular that Dr Paine should have been so ignorant of the ordinary mode of conducting a Review, as not to know that the reference from one article to another is no proof whatever of the identity of the authorship of the two,—even when this reference is made by the writer of the latter article. But, most commonly, such references are made by the editor, without any communication with the original writer, in the exercise of the privileges inherent in the office of the great editorial WE.

"In looking at the vast accumulation of words in Dr Paine's pamphlet, I confess that I feel regret that the review of his book (just and accurate as I still hold it to be) was not more favourable; as it is melancholy to think that so much time and pains should have been stolen from tasks of usefulness, and expended in elaborating a work, which, of course, no human being will read, except the author himself, perhaps the writer of the inculpated article, and, alas, the editor of the Review.

"It is lamentable to see how this mortification of Dr Paine's self-love has clouded his judgment throughout the whole composition of his pamphlet; and this obfuscation is nowhere more conspicuous, than where he attempts to convict you of plagiarizing, in your 'Principles of Physiology,' from Dr Channing. The very examples he adduces confute the charge. Believe me, dear Carpenter, to be most truly yours, JOHN FORBES.

OLD BURLINGTON STREET, *Nov.* 15, 1841.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

On the Corpuscles of the Blood. Part III. By Martin Barry, M.D., F.R.SS.L. & E.

The memoir, of which the following is an abstract, was read before the Royal Society of London, on the 17th of June 1841.

After remarking that no clear conception has hitherto existed, of the mode in which the floating corpuscles of the blood conduce to nourishment, the author states that he has found every structure he has examined, to arise out of corpuscles having the same appearance as the corpuscles of the blood. The following are the tissues which he has submitted to actual observation, and which have given the above result, namely, the cellular, the nervous, and the muscular; besides cartilage, the coats of blood-vessels, several membranes, the tables and cells of the epithelium, the pigmentum nigrum, the ciliary processes, the crystalline lens itself, and even the spermatozoon and the ovum.

The author then traces the nucleus of the blood-corpuscle into the pus-globule; shewing that every stage in the transition presents a definite figure. The formation of the pus-globule out of the nucleus of the blood-corpuscle is referable to the same process, essentially, as that by means of which the germinal spot comes to fill the germinal vesicle in the ovum. This process, which, in a former memoir, he had traced in the corpuscles of the blood, he now shows to be universal, and nowhere more obvious than in the reproduction of the tables of the epithelium. The epitheliu -cylinder seems to be constituted, not by coalescence of two objects previously single, as has been supposed, but by division of a previously single object. Certain objects, called by the author *primitive discs*, exhibit an inherent contractile power, both when isolated, and when forming parts of a larger object; an incipient epithelium-cylinder having been observed by him to revolve by this means. Molecular motions are sometimes discernible within corpuscles of the blood. The author has noticed young blood-corpuscles exhibiting motions, comparable to the molecular, and moving through a considerable space; and he has met with the nuclei of blood-corpuscles endowed with cilia, revolving, and performing locomotion. In his first paper on the corpuscles of the blood, he described certain instantaneous changes in form which he had observed in blood-corpuscles, and afterwards expressed his belief, that these changes were referable to contiguous cilia, although he had not been able to discern any such cilia. He now states that subsequent observation inclines him to think that these changes in form arise from some inherent power, distinct from the motions occasioned by cilia. The primitive disc just mentioned, seems to correspond in some instances with the "cytoblast" of Schleiden. Thus the very young corpus-

cle of the blood is a mere disc; but the older corpuscle is a cell. The author minutely describes the mode of origin of the pigmentum nigrum; showing that it arises in a similar manner in the tail of the tadpole, and in the choroid coat of the eye. He had before described the Graafian vesicle as formed by the addition of a covering to the previously-existing ovisac: this covering, he afterwards stated, becomes the corpus luteum. He now confirms these observations, with the addition, that it is the blood-corpuscles entering into the formation of the covering of the ovisac, which give origin to the corpus luteum. The spermatozoon appears to be composed of a few coalesced discs. The fibres of the crystalline lens are not elongated cells, as supposed by Schwann, but coalesced cells, at first arranged in the same manner as beads in a necklace.

The author concludes with the following recapitulation:—1. The nucleus of the corpuscle of the blood admits of being traced into the pus-globule. 2. The various structures arise out of corpuscles having the same appearance, form, and size, as corpuscles of the blood. 3. The corpuscles having this appearance, and giving origin to structures, are propagated by division of their nuclei. 4. The corpuscles of the blood, also, are propagated by division of their nuclei. 5. The minuteness of the young blood-corpuscles is sometimes extreme, and they are to be found in parts usually considered as not being permeable by red blood.

In a postscript, the author adds, that blood found in the heart immediately after death by bleeding, presents incessant alterations in the position of its corpuscles. Among these, when a single corpuscle is examined very attentively, it is seen to change its form; and the author is disposed to think it is this change of form that produces the alterations in position. The changes in form are slight, compared with those previously described by him as observed in blood elsewhere, and are not seen without close attention. The motions resemble those called molecular; and in the minutest corpuscles, which are mere points, nothing besides molecular motion can be discerned. It may be a question, the author thinks, whether molecular motion differs in its nature from the motion of the larger corpuscles just referred to. The division of the blood-corpuscles into corpuscles of minuter size, though apparent in blood from either side of the heart, has seemed more general in that from the left side; which, it is suggested, is perhaps deserving of notice in connection with the subject of respiration.—*Proceedings of the Royal Society of London, No.* 49.[1]

Rusconi's Observations on Injecting the Lymphatic Vessels of the Salamander and Frog.

"If," says M. Rusconi to M. Breschet, "you are desirous of pursuing researches on the lymphatic vessels of *small animals*, I would suggest the impropriety of making use of the injecting tubes of Sœmmering, and also of not using mercury, because that metal, by its weight, easily ruptures the tissues of small animals, finds its way out of the vessels, extravasates, after having dilated beyond their usual size the canals in which it was in the first instance introduced; in a word, it alters everything. Instead of mercury, make use of coloured wax, red or blue, and mix with it nut oil, in greater or less quantity, according to the temperature of the season, and perform your injection with a small syringe. I can assure you, after much experience, that you will be satisfied."—*Rusconi, as quoted in Microscopic Journal,* Nov. 1841.

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[1] An abstract of Dr Barry's former memoir is given at page 670 of the Monthly Journal for 1841.

Rusconi's Method of Dissecting Small Embryos.

In the same paper as that from which the above extract is quoted, the author says, "At the last meeting of naturalists, which took place at Turin, I read a short paper on the method I adopt to dissect very small embryos. It consists of embedding them in wax, in a manner similar to the diamond, previous to its being polished by the lapidary, then dissecting the embryos beneath water, after having lightly washed them with an acid solution, composed of one part of nitric acid, and eight parts of water. It is with the assistance of this anatomical process that I have followed the development of the brain of the frog; and I much regret that Professor Serres was not acquainted with it, at the time he made his observations on the brain, in the four classes of vertebrated animals. If he had known of it, he would not, as he himself says, have had so many obstacles to conquer, to follow the formation and successive changes of the brain and spinal cord of the tadpole."—*Annales des Sciences Nat.*, and *Microscopic Journal*, Nov. 1841.

Van der Hoeven, on the Blood Globules of Cryptobranchus Japonicus.

On subjecting the blood of this animal to examination, under a simple microscope and lens of medium power, Van der Hoeven perfectly recognised the oval globules with their nuclei. With the assistance of Plassel's microscope, he ascertained that the globules measured one-nineteenth of a millimetre, or one forty-secondth of a line in length, by one-thirtieth to one-thirty-secondth of a millimetre, or one-fifteenth of a line in breadth. With a power magnifying about eight times, the globules might be distinguished; and one of twenty-seven times was sufficient to discover the nucleus with clearness. The *Cryptobranchus Japonicus* is then, after the *Proteus*, a second example of a vertebrated animal with very large corpuscles, or blood-globules.—*Annales des Sciences Nat.*, April 1841; and *Microscopic Journal*, Nov. 1841.

Case of Double Vagina, Neck of the Uterus, and probably of the Uterus itself. By Dr Fricke.

M. C. B. aged 21, of a tolerably strong constitution, menstruated at 14, ceased to be a virgin at 18, and from that time had greatly indulged in sexual intercourse. On the 17th of September 1840, she was admitted into the Venereal Hospital for a syphilitic affection. Upon examination it was discovered that the vagina and the neck of the uterus were double. The labia were normal in form, but greatly developed. Between them protruded the left nympha, which was very large, and concealed the right one. Upon separating the nymphæ, a pale red fleshy mass *(bourrelet)* was seen at the entrance of the vagina, stretching from before backwards, from the posterior surface of the canal of the ureter, to the posterior wall of the vagina. The inferior margin of this mass was free and convex, bifurcated somewhat in front to embrace the *meatus urinarius*, near which it was about an inch or an inch and a quarter in breadth. It became more slender towards the middle, where it was not more than half an inch; it expanded behind this, forming a convexity to the left, and being inserted into the right of the median line of the wall of the vagina. This mass formed the inferior margin of a partition, two lines in thickness, which divided the vagina in its whole length into two canals, of which that on the right was a vagina of ordinary dimensions, and had, up to her admission into the hospital, served in copulation. At the bottom of this canal, the neck of the uterus was reached, and then a rounded orifice, of a size one third less than normal.

The external opening of the left canal was a little more behind, and the canal itself admitted easily a finger, and even a small speculum. By means of this instrument the presence of a uterine neck was discovered. A sound introduced into the orifice of the uterus, on the right, entered three quarters of an inch, and on the left, about an inch and a quarter, or an inch and a half. The sounds introduced to discover whether the uterus was single or double could not be made to touch one another; with the finger in one of the vaginæ, one could not penetrate more than half an inch between the necks. On exploration by the rectum, a root of about an inch in length was discovered between the vaginæ. Dr Fricke intends publishing farther particulars of this interesting case. As yet he does not know whether the menses flow from both canals.—*Zeitschrift für die Gesammte Medicin*, Oct. 1841.

Autopsy of a Woman who Died a short time after Defloration and Conception. By Dr Riecke.

The subject of the following observations was 28 years of age, the servant of a peasant. She had for some time been suspected of being too intimate with her master, and at last was surprised by his wife, *en flagrant délit*, and immediately dismissed. Two days afterwards, her dead body was found in a pond, and a judicial examination thereupon ordered by the authorities. We confine our quotation from it, to the part describing the organs of generation. The labia were slightly swollen, the hymen much stretched, and freshly torn: a quantity of mucus occupied the vagina. The bladder, the rectum, and the other organs contained in the cavity of the pelvis, were much injected. The uterus seemed to have increased more than one-third in size, and was of a deep red colour. Its cavity, which was larger than that in the normal state, was filled with bloody mucus, of a thicker consistence in those parts where it came in contact with the walls of the organ, which were very red, and somewhat softened. The right Fallopian tube was red, of nearly three times its natural size, and swollen at the middle. A tolerably thick sound *(une sonde assez épaisse)* passed easily through the canal till it met with some obstacles at the entrance into the womb. The swollen portion of the tube contained a white fluid. The ovary of the same side was twice as large as the other: it was highly injected, and embraced by the fimbriated extremity of the Fallopian tube. Upon its surface were observed two indented scars *(crévasses)* of the size of lentils, and red at their bottoms: from each proceeded a delicate membrane, half an inch in length, and having at its extreme an ovule of the size of a mustard seed. These ovules presented, even to the naked eye, an interlacement of vessels, very apparent on their surface, and containing in their interior a transparent fluid. When the ovary was cut into, a red granular-looking coagulum was distinctly seen to communicate with the scars already mentioned. From these data it is inferred that conception did not date from more than two days before death, but the evidence is not such as to enable one to form a decided opinion as to its exact duration.—*Gazette Méd. de Prusse*, 1840; and *Archives Gén. de Méd.*, Nov. 1841.

On the Vascular Structure of the Iris. By M. Grimelli.

In the Annali Universali, M. Grimelli has published an article on the structure of the iris. By injections of coloured oils thrown into the carotids he has been able to inject the interior of the eye, and all the vessels of the iris. During his injection he has seen the iris swell, and from his observations on the direction and form of these vessels, he believes that that membrane is of a vascular, and not of a muscular structure.—*Annali Universali di Medicina*, 1841.

Extraordinary Insensibility to Pain.

M. Rochoux read lately to the Academy of Medical Science, an extraordinary case of insensibility to pain in a lunatic of the Bicêtre. The unfortunate individual finding himself alone in one of the wards, opened the door of a large stove, and pushed his head within it. The keepers, attracted to the ward by the smell from the stove, had great difficulty in extricating him from his situation. The head, and the arms especially, were in a dreadful state. The burn extended in some places to the bone. The patient was indifferent to all that was passing, and seemed not to suffer from any pain. —*Journal de Méd. et de Chirurgie Prat.*, Jan. 1841.

Periodical Secretion of Milk after Menstruation. By Dr Wehr of Cassel.

M. H., a labourer's wife, thirty years old, of ordinary size, menstruated first in her eighteenth year, having previously enjoyed good health. Her catamenia continued quite regularly to the time of her marriage, in her twenty-eighth year. Ten months after marriage, she had a healthy child, which she suckled. Since that time, now six years ago, she has never been pregnant; but after menstruation, which occurs regularly every four weeks, she has always had a burning sensation in the breasts, both of which swell up, become hard, and secrete more or less milk. Some days before the recurrence of menstruation, the breasts again diminish, and the secretion gradually ceases.—*Casper's Wochenschrift*, May 8, 1841, and *British and For. Med. Rev.*, Oct. 1841.

Monstrosities by Inclusion.

Mathieu's case of extra-uterine pregnancy, given in the December Number of 1841, p. 916, is evidently an instance of *monstrosity by inclusion, as well as of extra-uterine conception.* The tumour attached to the diaphragm was not the product of conception, like the other, but a monster by inclusion, to use the term in common use. In support of this opinion, Professor Lesauvage of Caen has addressed a letter to the Gazette Médicale, of the 23d of October 1841. In Number II. for 1841, p. 121-124, we detailed a variety of cases of monstrosity by inclusion, and gave the theories advanced regarding them.

PRACTICE OF PHYSIC AND PATHOLOGY.

Analytical Account of Dr J. Skoda of Vienna's Researches and Rectifications in the Practice of Auscultation and Percussion. By Drs John James Drysdale and John R. Russell.

[In the Number of the Edinburgh Medical and Surgical Journal for April 1841, appeared the memoir of which the following is an abridgment. The subject is so important, that it is here but little curtailed. The position which Dr Skoda occupies in the hospital of Vienna, with a power of selecting all the cases suited to illustrate the phenomena that attend affections of the respiratory organs, gives him a field of observation unequalled in any other school of Europe; and the manner in which he has pro-

fi ed by his opportunities displays itself in the extremely practical character of his work. It is a very remarkable feature of his book, and one which cannot but exalt the writer in our estimation, that although he is considered as the best practical stethoscopist in Vienna, and has won for himself a European celebrity, by his successful cultivation of this branch of art, yet—far from instituting subdivisions depending upon niceties which only a very practised ear can distinguish, he sedulously inculcates, in almost every page, the necessity of never trusting to indications given by auscultation, unless they be of a perfectly unequivocal character, and of always taking the other symptoms into consideration. The desire to give simplicity and certainty to auscultation, has induced him to modify considerably the division of the respiratory sounds, as well as to assign a different, and frequently an inferior value, to many of them; casting away as useless many subdivisions proposed by Laennec, and holding as uncertain and valueless many sounds that were before considered pathognomonic. This circumscribing of the boundaries of our exact knowledge, is perhaps the surest way of extending them; for there is nothing more dangerous to science than a delusive advance to certainty, upon data insufficiently established.]

I. AUSCULTATION.

The auscultatory phenomena of the respiratory organs may be divided into those of the voice, the sounds of respiration, and those produced by the rubbing of the pleura.

Before considering the different kinds of resonance in detail, it is necessary to give an explanation of the mode in which the sound of the voice is transmitted through the chest.

As the voice is produced in the larynx, it must in all cases, whether weakly or strongly heard, be transmitted thence; and it would at first sight appear that the strong resonance is produced by a good, and the weak by a bad conducting power of the parts lying between the larynx and the parietes of the chest. Accordingly, it was long almost universally held by stethoscopical observers, that the increased resonance which accompanies a hard compressed state of the parenchyma of the lungs, or the presence of fluid in the pleura, depends on the increased conducting power of the intermediate substance. Several pathological facts, however, tend to throw doubt on the correctness of this explanation.

For example, if the chest be examined by repeated auscultation at successive intervals in the course of pneumonia, when there is hepatization of the lung, resonance of the voice, at one time very strong, at another only weak, will be perceived; while the other signs, particularly percussion, show that no change has taken place in the degree of hepatization. The cause of the occasional disappearance of the resonance of the voice is the obstruction, by fluid matter, of the bronchial tubes of the hepatized portion of the lung; for the resonance reappears readily when the patient makes a deep inspiration, or coughs. This disappearance and return of the resonance, while in other essential particulars the hepatization remains the same, does not accord with the commonly assigned cause; for, according to it, it would be a matter of indifference whether the bronchial tubes contained air or not. In pleuritic effusion into the cavity of the chest, the intensity of the resonance of the voice diminishes as the quantity of the exudation increases; while the contrary should happen, if the increased distinctness of the voice, at any stage of the effusion, depended on the superior conducting power of the interposed fluid. These contradictions to the commonly received explanation demand more minute examination of the grounds on which it has been adopted.

The question of the superiority in conducting power of dense over rare bodies, has been too much regarded as an abstract law, without paying sufficient attention to the particular circumstances which may modify or

prevent its operation. It is quite true that dense bodies conduct sound more readily than rare ones; but only if the sound be confined to the medium in which it is formed, for it passes with difficulty from one medium to another. For example, the slightest scratching at the end of a long pole is heard distinctly when the other end is placed in contact with the ear, while, if this be not done, (*i. e.* if the sound be transmitted by the air,) nothing at all is heard. The striking together of two stones under water, when the head is immersed, is distinctly heard, while no sound is audible when it is taken out. On the other hand, the human voice, which is formed in the air, is heard farthest in that medium. When the head is dipped into water, sounds produced in the air are heard very faintly, or not at all; and solid substances, as a board or a wall, interrupt sounds more or less completely. The laws of physics teach us further, that sound is more or less reflected in its transmission from a rare medium to a denser one, and that the new medium takes up less than would have been propagated in the same space had it remained in the medium by which it had been till then transmitted; and the less sound is taken up by the new medium, the greater the difference of consistence and coherence between the two media. The reason why enclosed passages and tubes, whose walls are of solid materials, conduct sounds better than the open air, is because they reflect the vibrations, which are thus confined to a small space, and prevented from being dispersed and lost in the surrounding air. If the walls of the tube were instrumental in conducting the sound, it is singular that a hollow tube should be used as a stethoscope, and not a solid cylinder of wood or metal. The voice, therefore, reaches the parenchyma of the lungs, not through the solid parts, but through the air in the trachea and bronchia, and ought to be carried farther in the healthy lung, in which the air penetrates into the air-cells, than in the hepatized lung, where the air-cells and smaller bronchia are obliterated. The vibrations, likewise, should pass more easily from the air into the light tissue of the healthy lung, than to the condensed parenchyma of the hepatized one, according to the law explained above.

A consideration of these facts would be almost sufficient in themselves to prevent us from acquiescing in the ordinary opinion, that the reason of the voice being louder when the lung is hepatized, than when it is sound and spongy, depends upon its being better conducted by the tissue of the lung when dense than when in its natural condition. Moreover, Dr Skoda has set this matter at rest by the following simple experiment, which he usually performs in the presence of his class, and which any one may easily repeat.

If the ear be applied to a stethoscope, placed successively on corresponding parts of a sound, and then of a hepatized lung, removed from the body, the voice of another person who speaks through a stethoscope placed upon the lung, at an equal distance in both cases, will be heard somewhat more distinctly in the sound, than in the hepatized lung; but the distinction is so insignificant, that, were the reverse the case, it would not account for the very marked difference in such a condition of the lungs in the living subject.

Dr Skoda explains the different degrees of strength of the voice in the chest by *the law of consonance.*

The fact that a sound can be heard, observes Dr Skoda, as distinctly at a distance, as at the place where it is produced, can only be explained, either by its diffusion being prevented, and its being obliged to remain concentrated during its progress, or by its being reproduced in its course, by means of consonance, and thus increased. But if a sound be heard louder at a distance than at the place where it was originally formed, this must be by means of consonance alone.

Consonance is a term adopted by Dr Skoda to express a well-known phenomenon; and it may be here properly explained.

A tense guitar string sounds in unison with a note produced in its vicinity, either by another musical instrument or by the voice. A tuning-fork held in the air emits a much weaker sound than when placed upon a table

or chest. The table or chest must increase the intensity of the sound, by assuming the same vibrations as the tuning-fork, or, in other words, by consonating with it. The note of a Jew's harp is scarcely perceptible when it is struck in the air, and it is heard much more distinctly when played in the mouth. Thus the air in the mouth must increase the sound of the Jew's harp, *i. e.* must consonate with it.

It sometimes happens that the voice is heard more strongly at the thorax than at the larynx, which in itself is sufficient to show that its strength is increased by means of consonance within the chest. The different degrees of the intensity of the voice heard at the thorax may be explained by the different strength of the consonance within the chest. To ascertain these changes, we must discover what it is within the chest that consonates with the voice, and by what circumstances the consonance is liable to be altered.

The voice, as it issues from the mouth, is composed of the sound formed at the larynx and the consonating sounds produced in the pharynx, mouth, and nasal cavities. This is shown by the alteration which the voice undergoes by shutting and opening of the nostrils and mouth, while there is no change made in the larynx. The pitch of the voice is evidently fixed by the larynx alone, and the opening and shutting of the nostrils and mouth has no influence upon it; the articulation of the voice, however, and its timbre depend upon the mouth and nostrils.

As it is certain that the air in the pharynx, mouth, and nostrils, consonates with the sound formed in the larynx, there can be no doubt that the air in the trachea and bronchi may also be thrown into consonant vibrations with the sounds formed at the larynx. Hence, it is the air in the chest, and not the parenchyma of the lungs, which consonates with the voice at the larynx, as the latter seems ill adapted for consonating, being neither stiff nor sufficiently tense. Those substances, such as air, tense strings, membranes, slips of wood, and thin plates, in which a musical sound is most readily produced, are most easily thrown into consonant vibrations.

Air can consonate only when confined within a circumscribed space. In the open air, the human voice, and every other sound, is heard more feebly than in a room. The air confined within the box of a guitar, violin, piano, &c. consonates with the note struck on the strings, while the sound is not increased by the consonance of the external air. The strength of the consonance depends upon the size and form of the space in which the air is confined, and upon the properties of the walls which bound the space. It appears that the consonating sound of the inclosed air will be the stronger, the more perfectly the walls reflect the sounds which spread through the air. A space surrounded by solid walls produces the greatest consonance, while in a linen tent, the sound is but little increased. The cause of the strengthening of sounds by the speaking-trumpet is well known.

The air inclosed within a defined space does not consonate with every sound; and should it consonate with several different notes or sounds, it does not reproduce them all with the same degree of strength and clearness. No body can sound in consonance with another, unless it is itself capable of producing the same note, or one whose vibrations form an aliquot part of the note. (Baumgaertner's Physik 4 Ausgabe Bd. I. p. 276.)

The deductions drawn from the physical principles just referred to, may be used in explaining the consonance of the voice in the chest. The air in the trachea and bronchi can consonate with the voice in as far as their walls resemble the walls of the larynx, mouth, and nasal cavities, in their power of reflecting sound. In the trachea, the walls of which consist of cartilage, the voice consonates almost as strongly as it sounds in the larynx. In the two branches, also, into which the trachea divides, the consonance must be nearly as perfect. On the entrance of the bronchia into the parenchyma of the lung, they have no longer cartilaginous rings, but merely thin irregular plates of cartilage interspersed in the fibrous tissue. As the bronchia ramify, these plates become smaller, thinner, and less numerous, and at last

disappear altogether; and the finest twigs of the bronchia consist merely of membranous canals. In the normal state of the parenchyma of the lung, the air in the bronchia consonates less strongly with the voice than that in the trachea, in proportion to the smaller number of cartilages they contain. The conditions which increase the consonance of the voice, in the air contained within the branches of the bronchi that ramify in the parenchyma of the lung, are, either that the walls of the bronchi have become cartilaginous, or, if still membranous, very thick, or that the surrounding tissue of the lungs has become devoid of air. In all these conditions, the walls reflect the sound more strongly than the membranous walls of the normal bronchia; and there must be no interruption of continuity between the air in the bronchia and that in the larynx. If the air in a confined space be thrown into either original or imparted vibrations, which give rise to sound, the surrounding walls not unfrequently partake of the same vibrations, and they do this the more readily the less stiff and hard they are.

The organ pipe vibrates, when the air contained in it sounds. The same is true of the speaking-trumpet. The larynx vibrates with every sound produced in it, and its vibrations are perceptible through several inches of animal substance. The walls of the bronchia which ramify within the parenchyma of the lungs, will, if the air within them consonate with the voice, be thrown into vibrations as readily as the larynx; and these vibrations may spread through a layer of fluid or muscle several inches thick, even to the parietes of the thorax, and the sounds produced by consonance in the bronhia will be perceptible at the walls of the chest.

In order to illustrate the above explanation of the difference of resonance of the voice in the chest, Dr Skoda performed a considerable number of experiments, a few of which are the following:

As after death the bronchia are almost constantly found filled with fluid, the lungs themselves are rendered unfit for the purpose of experimenting, we must therefore choose other tissues whose powers of reflecting sound resemble severally that of the healthy and hepatized lung.

In this respect a portion of the small intestine represents pretty well the more membranous parts of the bronchia, and a portion of the heart and liver the hepatized lung. If a person speak through a stethoscope placed on one end of a moderately inflated small intestine, consonant vibrations of the voice, in the air within the intestine, may be heard by another person listening through a stethoscope placed on the other end of the intestine. If a layer of solid or fluid substance be interposed between the mouth of the stethoscope and the intestine, as, for example, a piece of liver or of intestine filled with water, the sound is heard very indistinctly, and not at all if the thickness of the interposed substance reaches half an inch.

If a passage be bored in the liver, so as not completely to pierce it through, and this be spoken into by means of a stethoscope accurately fitted into the entrance of it, the voice may be heard along the whole length of the passage, and for a considerable distance on each side, through a stethoscope placed over it, so strong, that it by far exceeds in intensity the voice proceeding from the mouth of the speaker, which is heard by the free ear. The voice can still be heard even when a layer of liver, lung, cartilage, or bone several inches in thickness, be interposed, although naturally weaker and weaker as the thickness of the interposed substance is increased. If the liver be plunged in water, it is still heard through a stratum of water two inches thick. Similar experiments may be performed with the heart, and with the larynx and bronchi. If a piece of intestine, prepared as in the first experiment, be plunged under water, observing the precaution that no water gets into the stethoscope, the voice is heard much louder than if the experiment be made out of the water.

These experiments show tolerably distinctly, what relation the voice in the thorax holds to the different conditions of the lung. If the voice in the intestine, when not immersed in water, consonate so feebly as to be inaudi-

ble through a layer of lung, liver, or fluid half an inch thick, the consonance in the membranous bronchia will likewise be so slight, as not to be heard at the walls of the chest. But, on the other hand, as the voice in the heart and trachea, and in the passage bored in the liver, consonated so strongly, as to be heard through an interposed substance several inches thick, so will the voice in the bronchia of a lung hepatized or infiltrated with tuberculous matter, consonate so powerfully as to be heard louder upon auscultation at the thorax, than as it issues from the mouth.

II. MORBID STATES OF THE RESPIRATORY ORGANS WHICH CAN GIVE RISE TO AN INCREASED RESONANCE OF THE VOICE.

1. *All morbid processes, by which the lungs can become void of air, dense, and solid, through infiltration of foreign matters.* It is most frequent in extensive hepatization, infiltration with tubercular matter, and induration remaining after hepatization. Incipient pneumonia, lobular hepatization, and œdema of the lungs, cause either no resonance, or only a trifling degree of it. Solitary tubercules cause no resonance as long as the intermediate tissue contains air. It requires for its occurrence, the complete expulsion of air from the air cells, and that the infiltrated portion contain one of the larger bronchial branches.

2. *Compression.* This state is caused most frequently by the presence of fluid or air in the cavity of the pleura. The resonance is never so great as in pneumonia; and for its production it is necessary that the compressed portion contain a bronchial tube, strong enough to resist the obliteration which happens to the merely membranous bronchiæ.

Varieties of the voice heard in the thorax in the morbid state.

Strong Bronchophony. In this the voice penetrates the stethoscope completely, and is heard, as strong or stronger, or somewhat weaker, than at the larynx. It indicates under the spot where it is heard, the existence of a condensed portion of lung of considerable extent. Its most frequent, almost only causes, are either hepatization of pneumonia, or tuberculous infiltration.

Laennec thought that the resonance from cavities was of a peculiar kind, different from bronchophony. He named it pectoriloquy, and conceived it to be pathognomonic of excavation in the lungs. On close examination, however, it will be found, that of the characteristic signs of pectoriloquy given by Laennec, only one refers to the voice itself, viz. that in pectoriloquy the voice penetrates the stethoscope completely, while in bronchophony it merely enters it; and all the others are only collateral circumstances, such as the circumscribed or diffused extent of the sound, its timbre, the general symptoms, &c. But, as in many conditions of the lung just described, the voice penetrates the stethoscope completely, the distinction proposed by Laennec falls to the ground; and pectoriloquy must be considered as nothing but strong bronchophony, and therefore cannot be received as alone sufficient to indicate with certainty the presence of a cavity. As a cavity in a hepatized lung is very rare, while in a tuberculous one it is very frequent, we shall, in the latter disease, when strong bronchophony is heard, seldom err in diagnosticating a cavern at the place where it is strongest; but here our diagnosis does not rest on the character of the voice alone, but is aided by the other stethoscopic signs, and the general symptoms and course of the disease.

Weak Bronchophony. To constitute weak bronchophony, the voice must be clearly and distinctly heard, but accompanied by little or no concussion of the ear. It may attend any of those diseases above enumerated as giving rise to strong bronchophony, and in addition pleuritic effusion of considerable extent, and hydro-thorax. Its presence alone is insufficient to determine the existence of fluid in the pleura, but recourse must always be had to percussion, auscultation of the respiration, position of the neighbouring organs, &c. in making the diagnosis.

Egophony.—A peculiar modification of the resonance of the voice has attracted the attention of stethoscopists, and there has been much discussion (on which our limits do not permit us to enter) to determine its cause and value as a diagnostic sign. It was conceived by Laennec to indicate the presence of a thin layer of fluid between the lung and the walls of the thorax; but later observations have established the fact, that it has been heard in cases of pneumonia and tuberculous infiltration, where there was no fluid at all in the pleura, also in cases where there was a very large collection of fluid in the pleura, and that it has been absent in cases of effusion of various amount; and finally, in some cases of effusion into the chest, as well as in pneumonia, without any fluid being contained in the pleura, individual words, or even syllables, partake of the trembling or egophonic character, while others are destitute of it. Egophony may be, therefore, regarded as a mere modification of bronchophony, which has no essential connection with the existence of fluid in the chest, and has otherwise no particular importance.

The strong as well as the weak bronchophony passes imperceptibly into the indistinct murmur, and there is no defined boundary between these two sounds. It is easy, indeed, to distinguish between the extremes; but the transition sounds it is extremely difficult to distinguish. No conclusion should be drawn from the resonance of the voice, unless it possesses the unquestionable character of bronchophony.

3d. Indistinct Buzzing Sounds.—This resonance of the voice affords no definite indication. It does not indicate that the organs are in a state of health, for, as many conditions are required to produce bronchophony, the absence of any one may prevent its appearance; *e. g.* the bronchial tubes may not be open but obstructed with mucus, so that the consonance cannot take place, while, at the same time, any one of the morbid conditions just mentioned may be present.

III.—Auscultation of the Respiration.

The passage of the air through the respiratory tubes causes in the healthy state certain sounds, which are variously modified by disease.

The sounds produced by the respiration in the larynx, trachea, and larger bronchia, are of a rushing character, most closely imitated by impelling the air against the hard palate with the vocal organs, in the position necessary for pronouncing the consonant *ch* (German) or χ (Greek.) During gasping, it is produced involuntarily. The pitch may differ according to the width of the opening admitting the air, and is generally higher in the larynx than in the lungs; *but the character just mentioned remains always constant.*

The respiratory murmur in the air-cells and smaller bronchia resembles very nearly the sound produced by drawing in the breath with the lips nearly closed, or pronouncing the consonants *v* or *b*, while inspiring, or, as it were, sipping the air. It is only heard during inspiration; and during expiration, there is heard in the air-cells and smaller bronchia either no sound at all, or a very slight blowing noise between the sound of *f* and *h*, pronounced in expiration. The respiratory murmur in the air-cells is heard most strongly and distinctly in children.

Varieties of Respiratory Sounds.—(Skoda.)—1. Vesicular Respiration; 2. Bronchial Respiration; 3. Indeterminate Respiratory Sounds; 4. Amphoric and Metallic Respiration.

The name vesicular respiration can only be applied to that respiratory murmur which resembles sipping air, as above described. No other sound which does not display this character distinctly can merit the appellation, even although occurring in healthy individuals. Such a sound can be produced in no other way than by the penetration of the air into the air-cells. The sound during expiration has no connection with vesicular respiration, for it may be entirely wanting, or may be strong or weak, without in the

least influencing our judgment as to the presence or absence of the vesicular murmur. The presence of the vesicular respiration in any part of the lung is incompatible in it with any of those diseased states which prevent the penetration of the air into the air-cells, viz. compression of the parenchyma by exudation, tumours in the chest, enlargement of the heart, infiltration of the parenchyma, with plastic (that is, pneumonic) or tuberculous matter, or with blood, serum, &c. But it can co-exist quite well with solitary tubercles, however numerous, and with inflammation confined to single small lobuli, *i. e.* lobular hepatization, and is frequently found along with these morbid changes. The rough vesicular murmur indicates the least degree of swelling, and is always combined with increased loudness of sound.

When a sound is present in expiration, it always indicates that there is present in the bronchia some obstacle to the discharge of the air, and this generally consists in a swelling of their lining membrane.

Bronchial Respiration.—To admit of a sound being recognized as bronchial respiration, it must have the same *character* as laryngeal or tracheal respiration, and can only differ from these in its *pitch*. It is imitated by blowing through a tube, or with the tongue and mouth, in the position necessary for pronouncing the consonant *ch* in inspiration or respiration, as before explained.

The bronchial respiration indicates precisely the same states as the weak bronchophony, and these need not be again enumerated. But it never occurs in the normal condition of the respiratory organs, and therefore it always indicates a morbid state.

The production of the bronchial respiration, like bronchophony, has been attributed by Laennec, Andral, and others, to the increased conducting power of the condensed lung, (which renders the rushing noise of the air streaming in and out of the bronchiæ more audible.) But, in addition to the foregoing arguments, opposed to better conduction of the voice depending on the condensed state of the lung, the following is conclusive against this opinion. As the bronchia are merely passages for conducting the air into and out of the air-cells, the more the latter are capable of being expanded and contracted, the greater will be the streaming of the air through the bronchia, and *vice versa*. But in the healthy state, where the streaming of the air is greatest, there is no bronchial respiration at all; while, in a completely hepatized lung, when there can be no expansion or contraction of the tissue worth mentioning, and, consequently, no streaming of air through the bronchia, the bronchial respiration is loudest. The true explanation is undoubtedly that of Dr Skoda, viz. that it is from *the air in the bronchia vibrating in consonance with the respiratory sound of the larynx, trachea, and bronchi*, the condition necessary for consonance being afforded by the condensed lung, as already explained under the head of bronchophony.

The cavernous respiration of Laennec differs in no essential particular from bronchial respiration, and cannot be taken as a diagnostic sign of a cavity, unless accompanied by the amphoric or metallic echo.

Indeterminate Respiratory Sounds.—Under this term are comprehended all those respiratory sounds which cannot be referred to any of the preceding forms of respiration, or to the rattles or friction of the pleura, to be afterwards described. The respiratory murmur in the air-cells is sometimes so ill marked as to be indistinguishable from the respiratory sounds which spread from the deeper bronchiæ or larynx, and a weak rattle at a distance may resemble an indistinct respiratory murmur in the air-cells. As such a respiratory murmur may arise from many causes, it is impossible to say what is the cause in any given case—whether it be the entrance of the air into the air-cells—the stream of air into the larger bronchia—or a distant rattle, or two or more of these combined. Neither the sound derived from the larger bronchia, when it is not bronchial respiration, nor the indistinct respiratory murmurs, afford grounds for forming any conclusion as to the condition of the parenchyma of the lungs. Such being the case, any subdi-

vision of them is superfluous, and they may be all included under the name of indeterminate respiratory sounds. Although a very skilful ear may be able to detect the transition of the distinct forms of respiration into indeterminate, yet, whenever a sound is at all doubtful, it is much better to class it among the indeterminate, and to call in the assistance of the other signs and indications in forming a diagnosis.

The Rattles.—The rattles are sounds produced in respiration by the breaking of the air through fluids, such as mucus, blood, &c. and sometimes by its passing over solid substances, such as a fold of mucous membrane, which, in consequence, may be thrown into vibration. Most of these resemble the bursting of bubbles; others are like the creaking of leather, crepitation of salt, &c.

Division of the Rattles.—1. The vesicular rattle; 2. the consonant rattle; 3. the crackling, or dry crepitating rattle with large bubbles, (*râle crépitant sec à grosses bulles ou craquement* of Laennec); 4. indeterminate rattles; 5. rattles with amphoric echo.

The vesicular rattle is that produced in the air-cells and small bronchial tubes. Its peculiar character is that the bubbles are very small and of equal size. It indicates the presence of fluid, such as mucus, blood, or serum, in the finest bronchial tubes, and air-cells; and also that the latter are penetrated by the air. Its presence, therefore, shows that none of the morbid conditions which prevent the entrance of the air into the air-cells can exist.

This sound corresponds to the moist crepitation of Laennec, which he considered as pathognomonic of incipient pneumonia. Its occurrence, however, in its pure form, is rare in pneumonia; and it is likewise heard in other morbid affections, such as œdema of the lungs, tuberculosis, and even common catarrh. With the view of obviating this difficulty, Laennec divided it into crepitating and subcrepitating; but, as numerous facts attested by Andral, Chomel, Cruveilhier, and Skoda, prove that this is not a proper distinction, the presence of the crepitating rattle can only be held to prove the existence from some cause or other of fluid in the air-cells, and their permeability by air; and we can only conclude that pneumonia is present, if we discover its other indications.

The consonant rattle is clear, high in pitch, and the bubbles which form it are unequal in size. Such a rattle is produced in the larger branches of the bronchia, and in the trachea; but when heard at the parietes of the chest, after having been transmitted through the lungs by conduction, it loses much of its height and clearness. If, however, the conditions for consonance are present, it is heard of an intensity and clearness equal to that at the place of its origin. The consonant rattle is therefore diagnostic of the same state as bronchophony and bronchial respiration.

Laennec's dry crepitating Rattle.—This sound, according to Laennec, resembles that made by the blowing up of a dry pig's bladder. It is held to be a pathognomonic sign of vesicular and interlobular emphysema; but it occurs only in those cases in which the cells are expanded to the size of a barleycorn or bean, and communicate with a bronchial tube. It occurs also when the bronchial tube is expanded into a sac, and in excavations of the lung, which do not communicate with the bronchia by too wide an opening, and have membranous walls. The cause of the appearance seems to be that the air-cells, from having lost their resilence, instead of contracting during expiration, merely collapse when the air leaves them; and, on the return of the air on inspiration, are suddenly expanded with a crackling noise.

Intermediate Rattles.—Under this head are included all those rattles commonly called mucous rattles, which are not vesicular or consonant, and are not accompanied by the amphoric echo. They afford no information as to the state of the parenchyma of the lungs, and therefore indicate merely the presence of fluid in the bronchial tubes.

Amphoric Echo, and Metallic Tinkling.—In speaking into an empty earthen-ware vessel with a dilated body, there is heard, besides the voice, a

peculiar humming sound; this represents the amphoric echo of Laennec. There is likewise heard in the vessel, but better in large spaces enclosed with solid walls, such as chambers, and especially vaults, frequently a metallic echo accompanying the voice if somewhat loud. This is the metallic echo or tinkling.

In a tube that is not very wide the amphoric echo is never produced.

In cases where there is a large cavity in the chest whose walls are disposed to reflect sound, and which contains air, a similar sound occurs. As the conditions for its occurrence are, that the cavity be large and contain air, it has only been met with in cases of extensive excavations of the parenchyma of the lung, and in pneumo-thorax. Laennec believed that a cavity must contain air *and fluid* to enable it to exhibit these appearances, and his opinion has been universally adopted. But the presence of fluid is quite superfluous, as both a jar and a chamber produce the sound without their containing any; and if an inflated stomach, in which there is no fluid, be spoken against by means of a stethoscope, the amphoric echo and metallic tinkling are heard within it.

Laennec believed further, that the cavern in the lung, or the cavity in the pleura, must communicate with a bronchial tube, to enable the sounds to occur. But only in the rarest cases of pneumo-thorax does a communication with the bronchia remain, while the amphoric and metallic sounds are an almost constant attendant of this morbid state. In the experiment with the stomach, described above, there was no communication with the external air, and this leads us to the true explanation, which seems to be, that the air contained in one of the bronchial tubes consonates with the voice, and produces vibrations within the cavity of the pleura or cavern in the lung, from which it must not be separated by more than a thin layer of parenchyma.

The mechanism of these sounds will be easily understood, if we keep in mind that they are merely the peculiar character given to the sounds of the voice and respiration already described, by their being re-echoed in a space of considerable size filled with air.

The amphoric respiration, or *bourdonnement amphorique*, arises either from the respiratory sound in a large bronchial tube which opens into a cavity, or the re-echoing in the pleura filled with air of the bronchial or consonating respiration in a neighbouring tube.

The metallic tinkling, *tintement metallique*, may arise from bronchophony, from rattles, or from the agitation of fluid produced by coughing, or violent motion, re-echoing in a cavern, or in the pleura when filled with air. Of these, by much the most frequent cause are the rattles.[1]

CASE OF INTERMITTENT FEVER OCCURRING EVERY SEVENTEEN DAYS.

An officer of the French army, in Africa, was seized every seventeen days with intermittent fever. He thought at first that the attacks were merely relapses; but being struck by the periodical return of the symptoms, he took quinine before the expected attack, which had the effect of preventing it. He had laboured for nearly twelve months under the fever, before he discovered the regularity of its return.—*L'Examinateur Méd.*, 10th Oct. 1841.

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[1] A translation of the work of Dr Skoda, by Dr A. Fisher, whose long residence in Germany, and intimate personal acquaintance with Dr Skoda should qualify him for the task, is, we understand, now ready for the press.

SURGERY.

Case of Erectile Tumour treated by Extirpation and Cauterisation. By M. Marchal of Strasburg.

A woman having an enormous tumour in the thickness of the upper lip was admitted into the civil hospital of Strasburg. It was irregularly circumscribed, of a violet red colour, covered with venous ramifications, soft in some places, hard in others. It was pulsating and elastic *(rénitente.)* The disease was chiefly in the sublabial region, and was commencing to invade the mucous membrane of the corresponding gum. M. Marchal cut out the tumour in the following manner:—He surrounded it by means of a double semi-elliptical incision, removing with the morbid parts a segment of the healthy, so as to destroy the roots. The actual cautery, at a white heat, was then applied to the whole surface of the wound, which was afterwards left to itself to suppurate for some days. When cicatrization commenced, there were seen here and there, upon the wounded surface, fleshy granulations, the rapid development of which, along with their vascular nature, caused an apprehension of the reproduction of the tumour. They were, however, successfully repressed by the free application of the acid solution of the nitrate of mercury. The lint with which the wound was dressed was daily soaked in this caustic. This treatment was continued for about twenty days, when healthy granulations appeared, and cicatrization was speedily completed. Six months have now elapsed, and the parts still retain their integrity, without any deformity. M. Marchal has destroyed two other erectile tumours in a similar way, and with as complete success.—*Gazette Méd. de Strasbourg;* and *Journal de Méd. et Chirurg. Prat.*, Oct. 1841.

Remedy for the Prominence of the Eye, which is believed to follow the Operation for Strabismus.

M. Baudens, in a communication made to the Academy of Medicine, at Paris, on the 11th of October last, states, that, on attentively examining the apparently projecting eye in these cases, the lower eyelid is found to be turned down. This it is, he conceives, which, by exposing a great part of the cornea, causes it to be supposed that the eye is projecting. To satisfy one's self of the contrary, he says that it is sufficient to seize with small forceps, a fold of the integuments of the inferior eyelid, and to stretch it, pulling upwards and inwards. It then becomes evident, that the globe of one eye is not more prominent than that of the other.

The operation for the remedy of the deformity consists in excising, with the curved scissors, a fold of skin in the internal angle, care being taken to avoid the orifices of the lachrymal ducts, by keeping at some distance from the mucous membrane. The excision is to be carried a little more outwards in the lower than in the upper eyelid. When the cutaneous denudation has been made sufficient, the superior and inferior eyelids are united in the internal angle by three stitches, the external being made to take in a little more skin than the other two. M. Jules Guerin, in a note, at p. 669 of the Gazette Médicale, of the 16th October 1841, states, that he performed Mr Bauden's operation, some days before the communication was made to the Academy, in ignorance of his having been anticipated. He does not seem to lay claim to priority.

CASE OF LITHOTOMY IN A CHILD EIGHT YEARS OLD—FIVE STONES REMOVED ONE OF THEM ENCYSTED. BY M. MIRAGLIA.

The child had long suffered from symptoms of stone. The lateral operation was performed, when five stones, each of the size of a nut, were removed; one of them was found encysted; before it could be extracted by the forceps it was found necessary to tear the walls of the cyst. The coats of the bladder were thickened, and covered with sabulous matter. Violent inflammation followed; on the 5th day emollient injections, with cherry laurel water, were thrown into the bladder, which brought away a great quantity of sand. The symptoms then subsided. Part of the cyst from the bladder was found in the urethra on the 22d day;—it caused retention of urine for about forty-eight hours. An abscess in the hypogastrium then followed; this was opened, and the recovery was rapid.

The case is remarkable for the number of stones found—for the cyst—and thickening of the coats of the bladder in such a young child.—*Gazette Méd. de Paris*, 24th April 1841.

MIDWIFERY.

CHANGES WHICH THE INTERNAL SURFACE OF THE SKULL UNDERGOES DURING PREGNANCY, FIRST DESCRIBED BY ROKITANSKY of Vienna.

[We have been favoured with some of the proof sheets of a posthumous work on pathology, now in the press, by the late Dr Fletcher, and edited by Drs Russell and Drysdale, with permission to make extracts. The work, if we may judge from the specimen in our hands, is full of new and interesting matter, both in the text and in the form of notes by the learned editors. We do not wish to anticipate the book, and shall therefore content ourselves, in the mean time, with the following quotation, which occurs as a note at p. 16.]

"This seems to be the proper place to advert to some very remarkable changes that the internal surface of the skull undergoes during pregnancy, which were first observed and made known by Professor Rokitansky of Vienna, who describes a calcareous deposit as being almost constantly present there in the pregnant and puerperal state.

"This deposit varies from $\frac{1}{6}$, $\frac{1}{3}$, $\frac{1}{2}$ of a line in thickness. It appears principally on the frontal and parietal bones, especially in the course of the arterial sulci. Sometimes it is found upon the bases of the skull and the frontal bones. It does not extend uuiformly over the surface of the skull, but is scattered like little islands, leaving intervals quite unaffected. It may be considered as an almost invariable appearance in pregnancy, and does not at all indicate any abnormity of that condition. It seems to depend upon the state of the uterus during pregnancy, as it has not been observed either in cases of extra-uterine conception, or in cases of polypi of the uterus. It has been detected as early as the third month of pregnancy.

"This formation of bone has been observed in three distinct stages of development: First, as a yellowish-red and gelatinous vascular condition, easily separated from the *tabula vitrea* by the knife: Second, as a thin, weak, porous, cartilaginous layer, attached by a gelatinous exudation, to the skull; this is likewise easily separated by the knife: Third, as an osteo-cartilaginous plate, attached to the skull by numerous fine vessels, which must be torn through before it can be separated. These three stages of development are generally observed on the same skull.

As far as observations hitherto made lead, it would seem that such a deposition takes place at each pregnancy, and that the substance so deposited is not absorbed. Thus Rokitansky is of opinion, as well from these facts as from numerous observations, that the skull becomes permanently thickened by frequent pregnancies.

The difficulties of the healing of fractures in pregnant women stands in a curious relation to this apparent superabundance of calcareous matter in the system; but with the connection of this osteophyte with the symptoms that appear in pregnancy, and its relation to that condition of the system in general, we are as yet wholly ignorant.—Editors. (Vide *Oesterreich, Med. Jahrbücher*, Bd. xv. s. 501.)"

Cases Illustrating some of the Difficulties in the Diagnosis of Pregnancy.

The following cases show, how easily both accoucheurs and their patients may be mistaken as to the period and even the existence of pregnancy.

Case I.—A woman, 45 years of age, the mother of twelve children, supposed herself to be pregnant for the 13th time; she had all the symptoms which she had experienced on former occasions. Thus she had always been tormented with fits of suffocation, requiring depletion, and now also it was necessary to bleed her several times; her abdomen increased in bulk; the labia, as usual, became infiltrated. The patient, who had been in the habit of fixing with tolerable precision the day of her accouchement, reached the expected term, and being seized with pains, sent for the medical man who had attended her in former confinements. Upon his arrival, he found her suffering from the most intense pains, they were intermittent, rapidly succeeding one another, and accompanied by efforts of expulsion. She had spasms also similar to those which had accompanied all her former accouchements. Seizing a favourable opportunity, he practised the *toucher*. Great was his surprise, to find that his patient was not with child; and equally astonished were she and her friends at so unlooked for an announcement. What is still more remarkable, the woman, when convinced that she had been led into error, ceased to experience any of the symptoms which had simulated labour, all of them vanishing, as if by enchantment. She soon recovered her usual health, and resumed her ordinary occupations.

Case II.—M. Dubois was called to a young lady who believed that she had reached the full time. He found her lying upon a sofa, a prey to the most excruciating pains. These pains, although sufficiently decided, did not follow one another very rapidly, which induced M. Dubois to request her to walk about a little in the room. Twice she attempted to do so, but the pains which she experienced were so severe, that she could not be persuaded to rise. Profiting by a moment of quiet, he practised the *toucher*, and discovered, not without surprise, that labour had not commenced, and that she had not reached the full period. In consequence of the assurances which he gave to this effect, this lady ceased to suffer pain, and actually went out in a carriage during the same day. She was not delivered for fifteen days afterwards.

The pains in this case were evidently the result of imagination, and proceeded from the firm belief which the individual had in the correctness of her calculations.

Case III.—A woman believed that she had reached the full time; but the surgeons who were called in, discovered that the product of conception was not contained in the womb. Nevertheless, she was suffering severe pains, attended by efforts of expulsion. Several accoucheurs, assembled in consul-

tation, discussed the propriety of practising the Cesarian section, but this proposition being negatived, the patient was left to repose. Speedily all the appearances of labour disappeared: the efforts of expulsion ceased, and the patient resumed her ordinary occupation. Some months afterwards she entered the clinical hospital in a state of profound marasmus, and soon afterwards died. On dissection, it was discovered that she was not *enceinte*, but that scirrhus of the ovary filled part of the belly.

In the three cases above narrated, the women, strongly impressed with the belief that they had arrived at their full time, were so acted upon by this imagination, as to experience a series of symptoms, exactly similar to those which accompany labour.—*Journal de Méd. et de Chirurg. Prat.*, Oct. 1841.

IMPERFORATE HYMEN AND ITS CONSEQUENCES—OPERATION AND CURE. BY MR LANE.

In 1837, Mr Lane was called to a woman of 35 years of age, who had never menstruated. She had taken many emmenagogues with the effect of increasing the lumbar pains and other symptoms under which she laboured. The patient, after some difficulty, having consented to an examination, the hymen was discovered to be imperforate, but so greatly distended as to allow the finger to penetrate a great way into the vagina. The patient suffered pains like those of labour. When most acute, the membrane became tense. Profiting by such a state of it, Mr Lane made an incision of about an inch and a half, and evacuated twelve pints of blood. The first quantity that flowed was black like tar, the rest was fluid and resembled ordinary blood. The woman was completely cured, and ten months afterwards was delivered of a well-formed child.—*Dublin Med. Press*, 1841.

MATERIA MEDICA AND CHEMISTRY.

ON THE STYPTIC WATER OF BROCCHIERI.

Dr Pereira of Bourdeaux, having heard that experiments had been made in Paris with this styptic, procured some of it, and gave it to M. Fauré, a celebrated druggist, to analyse, who found that it was only a distilled water of a resinous wood. He immediately began to prepare another; he succeeded in procuring one possessed of the same properties as the specimen given him. The carotid and axillary arteries of a dog were cut, and pledgets of lint, the one dipped in the styptic of Brocchieri, the other in the one prepared by M. Fauré, were applied to the wounds. In both, the bleeding ceased instantly. In a quarter of an hour, the pledgets were removed, when not a drop of blood flowed, and in some days after, the wounds were healed. The same experiment was performed, on the sacro-coccygeal artery of a horse, with a similar result. Dr Pereyra then prescribed M. Fauré's liquid internally, and with great success, in cases of chronic diarrhœa, scurvy, dysentery and purpura hemorrhagica. It has only been used externally in a case of wound of the thumb; the hemorrhage was instantly arrested.

The following is the composition, and mode of preparing M. Fauré's liquid.

Fresh wood of the pine, 10 kilogrammes.
Pure water, 20 kilogrammes.

Saw the wood into very small thin pieces, and bruise them in an iron mortar, put them into a flask with the water, and macerate for 12 hours; then distil, until 10 kilogrammes pass over. The liquid thus obtained is to

be put into a larger vessel, and allowed to remain for 24 hours, the essential oil, which floats on the top, is to be removed by a pipette. When this is done, the vessel is to be well shaken, and the styptic water is prepared. It is somewhat opaque, and has a smell of turpentine. It ought to be well shaken before it is used.

Dr Pereira intends to continue to publish his experiments with this liquid; as soon as they are made known, we shall notice them; as yet he has neither mentioned the dose, nor the mode of administering it.—*Journ. de Méd. et de Chir. Prat.*, Aug. 1841.

[We are much afraid that this styptic, like all its predecessors, the virtues of which have been so much boasted of, will not realize the hopes of the practical surgeon.]

Ergot producing Abortion in Cows.

In the neighbourhood of Trois Croix there has been this season an epidemic of abortion among the cows, which has caused much consternation among the farmers. M. Bodin, director of the school of agriculture, has discovered that the grains of rye, and many of the other gramineae, contained a considerable quantity of ergot. This, he concludes, was the cause of the animals aborting. The observation merits attention, for it may be found that the ergot of all grains, as well as of rye, produces the same effects.—*Journal de Méd. et Chirurg. Prat.*, Oct. 1841.

[We are not aware that any experiments have been made with the ergot of any of the *Gramineæ* excepting rye, which, if true, is surprising, as many other individuals of the family are subject to ergot. Phaebus enumerates thirty-one grasses liable to it. "In the summer of 1838," says Pereira, "nearly all the grasses growing in Greenwich marshes were found ergotised. But the disease is not confined to the *Gramineæ*—the *Cyperaceæ* are also subject to it, and perhaps also the *Palmaceæ*."]

Senecio Jacobœa.

On the 23d of July 1841, a note, from Mr Gardner of Great Portland Street, appeared in the Medical Gazette, calling the attention of the profession to the Senecio Jacobœa (or ragwort,) an indigenous plant, as a reputed remedy in gonorrhœa, and inviting those who might wish to try it in this disease, to apply to Mr Bullock of 22, Conduit Street, London, who had prepared some pounds of the extract for gratuitous distribution to the profession. On the 27th of August, the same Journal published a second letter from Mr Gardner on the subject, but not giving any of the results obtained by himself or others. We hear that it does not answer the expectations formed of it; but we think it right to draw the attention of surgeons in the country to the subject, as it is being tried pretty extensively in town. The dose is 15 grains of the extract three times a-day.—*Vide Med. Gazette* of July 23, and August 6 and 27, 1841.

Convenient Formula for Making Copaiba into Pills. By John Gardner, Esq., London.

Take of Balsam of Copaiba, 5 parts.
Bicarbonate of Magnesia, 3 parts.

Rub them together, and a mass is made exactly adapted for pills.—*Med. Gazette*, Aug. 27, 1841.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

ROYAL SOCIETY OF LONDON.

Nov. 30, 1841.

At this, the anniversary meeting, Sir John William Lubbock, Bart., V. P. and Treasurer, in the chair, after the reading of the address of the president, and the various *éloges* of the deceased fellows, the adjudication of the annual medals of the Royal Society by the president and fellows, was announced:—The Copley medal, to Dr G. S. Ohm, of Nuremberg, for his researches into the laws of electric currents, contained in various memoirs published in Schweigger's Journal, Poggendorff's Annalen, and in a separate work, entitled, "*Die galvanische kette mathematish bearbertat;*" the royal medal, in the department of chemistry, to Dr Kane, M.R.S.A. of Dublin, for his memoir, entitled the "*Chemical History of Auchil and Litmus,*" published in the Philosophical Transactions for 1840. The other royal medal, not having been awarded in the department of mathematics, was awarded in that of physics, to Eaton Hodgkinson, Esq., F.R.S. of Manchester, for his paper entitled, "Experimental Researches on the strength of pillars of cast iron, and other materials," published in the Philosophical Transactions for 1840.

The following is a list of the New Council. PRESIDENT—the Marquis of Northampton. TREASURER—Sir J. W. Lubbock, Bart., M.A. SECRETARIES—Peter Mark Roget, M.D.; Samuel H. Christie, Esq., A.M. FOREIGN SECRETARY—John F. Daniell, Esq. OTHER MEMBERS OF THE COUNCIL—*Neill Arnot, M.D.; *Francis Baily, Esq.; William Thomas Brande, Esq.; Richard Bright, M.D.; W. H. Fitton, M.D.; *Sir William J. Hooker, K.H., LL.D.; *William Hopkins, Esq., M.A.; *William Lawrence, Esq.; *Gideon Algernon Mantell, Esq., LL.D.; *William H. Pepys, Esq.; Rev. Baden Powell; *George Rennie, Esq.; Lieut.-Col. W. H. Sykes; *Charles Wheatstone, Esq.; *Rev. William Whewell, B.D.; Rev. Robert Willis, M.A.

The Fellows whose names are printed with an asterisk, were not members of the last Council.

ROYAL SOCIETY OF EDINBURGH.

At a general meeting of the Royal Society, held on Monday the 22d inst., the following Council were elected. PRESIDENT—Sir T. Makdougall Brisbane, Bart., G.C.B., G.C.H. VICE-PRESIDENTS—The Hon. Lord Glenlee; Dr Hope; Sir D. Brewster, K.H.; Right Hon. Lord Greenock, K.C.B.; Rev. Dr Chalmers; Dr Abercrombie. GENERAL SECRETARY—Professor Forbes. SECRETARIES TO THE ORDINARY MEETINGS—Dr Christison; David Milne, Esq. TREASURER—John Russel, Esq. CURATOR OF LIBRARY AND INSTRUMENTS—Dr Traill. CURATOR OF MUSEUM—John Stark, Esq. COUNCILLORS—John Stark, Esq.; Sir Henry Jardine; John Shank More, Esq.; Professor Henderson; Professor Kelland; Right Hon. Sir George Warrender, Bart.; Sir John Robison, K.H; Professor Syme; Arch. Bell, Esq.; W. A. Caddel, Esq.; Dr Maclagan; James Wilson, Esq.; Right Rev. Bishop Terrot.

BOTANICAL SOCIETY OF LONDON.

Nov. 29, 1841.

At this, the anniversary meeting, J. E. Gray, Esq., F.R.S., &c., President, in the chair, a ballot took place for the Council for the ensuing year, when the chairman was re-elected President; and he nominated J. G. Children, Esq., F.R.S., and Hewett C. Watson, Esq., F.L.S., Vice-Presidents.

From the Report of the Council it appeared that twenty members had been elected since the last anniversary, and that the Society now consisted of 142 members. The donations to the library amounted to 230 volumes, and the donations to the herbarium and museum had far exceeded those of former years.

MEDICAL SOCIETY OF LONDON.

Monday, October 25, 1841.

1. *Disease of the Heart.*—An account of a case of disease of the heart, and of the morbid appearances after death, by Mr Mitchell of Rennington, was read. The patient, a stout, middle-aged man, was seized with very urgent symptoms in December 1838. His skin was cold, and covered with clammy sweat; breathing was very laboured; a copious bloody and frothy mucus was forced from the mouth at every expiration. No pulse could be discovered at the wrist, nor any pulsation at the heart. Domestic affliction had proved the immediate cause of this paroxysm, and he had suffered from the same on several previous occasions. Under the use of gentle stimuli, friction, and the recumbent position, the patient got speedily over this attack, and enjoyed tolerably good health until January 1840, when the same urgent symptoms supervened. In the course of an hour, the attack passed off; but the heart was discovered to pulsate with unusual force, and slight pain was experienced in the cardiac region. Copious bleeding, together with counter-irritation, was subsequently adopted, and the patient seemed to have regained his health. Several attacks took place between this time and the 22d of last June, when, being out walking, he suddenly dropped on the street, and died shortly after.

Examination of the body, three days after death.—The lungs were gorged with blood, and bloody mucus was found in the air cells. The heart was larger than natural, and the pericardium, where reflected over that organ, presented several opaque white spots, evidently the result of inflammation.

The thoracic aorta, throughout its entire course, was completely converted into a bony cylinder, covered with a thick coating of condensed cellular structure. The vessel was an inch in diameter. The semilunar valves were converted into bone, and the coronary arteries were almost obliterated by ossific deposit. The arteria innominata, the subclavian and carotid arteries, for nearly two inches of their course, were complete bone, and all much increased both in diameter and in the thickness of their coats.

Dr Clutterbuck considered that this case went to support the opinion, that inflammation might create great structural changes, even without its presence being suspected. The pain and febrile heat, together with the relief from blood-letting, were sufficient to prove that inflammatory action had existed in this case; and he did no doubt that this condition had existed at the very commencement of the disease. The interruption of the circulation was to be attributed to the presence of a spasmodic condition of the heart, the result of inflammatory action. Muscles affected with inflammation frequently become the seat of spasmodic action. He had attended several cases of inflammation of the heart, in which spasm of that organ had supervened. With Mr Pettegrew, he had attended a patient affected in the same manner as Mr Mitchell's patient. The patient rallied under the use of fomentations, cupping, and counter-irritation. In similar cases, he had subsequently abstracted small quantities of blood, with much benefit.

Mr Headland did not think that inflammation had been the cause of the ossification in this case; ossification does not usually follow arteritis, and is a disease which is generally marked by the effusion of coagulable lymph.

Dr Bennet said, that ossification was not a result of inflammation, but of an error of nutrition, which depended on various circumstances, and not uncommonly on a morbid condition of the blood. Some affections of the heart were purely neurotic.

A woman labouring under such an affection of the heart, and suffering severe pain in the cardiac region, was entirely cured by the administration of the extract of aconite, given to the extent of a quarter of a grain three times a-day.

2. *Urinary Calculi.—Insects passed from the Urethra.*—Mr Elliot exhibited seven urinary calculi of a light brown colour, with rounded edges. Each calculus was about an inch in its longest, and about half an inch in its shortest diameter, and weighed about half an ounce. They were voided by a female of 74 years of age, who had never suffered any symptoms of stone in the bladder, and who, a few months before, had been cured of a considerable and old-standing prolapsus uteri. The first calculus was voided when the patient was at stool, and the others passed in couples. No assistance was required during their progress, and there existed no preternatural communication between the vagina and the bladder.

Mr Wigan said that he had lately seen a gentleman at Brighton, suffering from stone in the bladder, who was in the habit of taking thirty grains of morphia daily, and with advantage. This gentleman had exhibited to Mr Wigan about twenty insects, resembling the common centipede, which he had picked out of the urethra; and in all, not less than a hundred had been so obtained. Several of these living insects had been placed in the urine of the gentleman, in order to ascertain whether they could survive in this fluid. They lived four days, and then died, apparently from the decomposition of the urine.

Monday, Nov. 1, 1841.

Vaccination.—Mr Leese, in reply to a question put by the president, said, that his experience still continued to prove, that vaccination was as efficacious as inoculation. The vesicle produced by lymph recently obtained from the cow was the same as that which was induced by the lymph in common use. It did not appear that the district vaccinators lately appointed vaccinated many children.

Mr Dendy remarked, that the vesicles produced by lymph recently taken from the cow, produced vesicles of a somewhat variable character. In one example, the vesicle was conical, and did not present the usual depression or buttoned-down-like appearance. The lymph was obtained from Mr Esklin of Bristol, who had procured it from a cow, which had been vaccinated with virus obtained from the human body. The vaccination law, which had been lately passed, had neither been called for, nor had made vaccination more general.

Dr Alison said, that he had learned from good authority, that the late law had succeeded remarkably well in some districts, and that ere a few weeks had elapsed after their appointment, some medical men had vaccinated several hundreds.

Monday, Nov. 8, 1841.

1. *Morbid Local Nervous Action.*—Dr Bennet introduced this subject. He had lately met with several cases of spasmodic extension of the forefinger, in literary persons accustomed to much writing. About twenty years ago, a gentleman of spare general conformation and of studious habits, became the subject of this disease. When holding the pen in the usual manner, the forefingers would become violently extended, and the pen would fall from the hand. This spasmodic action did not take place when he mended his pen, nor when the pen was held between the fore and middle fingers. Another gentleman similarly affected, had very lately come under his care. These affections depended on local disease of the nerves of the forefinger, and the spasmodic movements were excito-motory.

Mr Dendy had met several such cases. The fingers were usually attenuated; the disorder was connected with paralysis of the forefingers, and arose from pressure on the nerves. The movements were not excito-motory.

Mr Proctor denied that the disorder was in any way connected with paralysis. The spasmodic extension of the forefinger was the same sort of morbid action which took place in chorea and in some examples of spine disease. These local spasmodic movements usually depended on disease of the brain or of the spinal marrow, the removal of which would prove a cure. When the brain was the seat of disease, spasmodic movements were not always general, but were frequently confined to a part only.

Dr T. Thompson had met this disorder on several occasions. The exciting cause was over-exertion; the condition of the nerves of the finger, one of irritation, the re-

salt of exhaustion, and not unlike that state of the nervous system remarked in delirium tremens.

Dr James Johnson did not think that these local spasmodic movements generally depended on disease in the nerves of the part, but referred them, for the most part, to distant irritation. The most common seat of this irritation was in the abdominal viscera.

Mr Pilcher agreed with Dr Bennet in thinking that the disordered actions in question were excito-motory. The profession was deeply indebted to Dr Marshall Hall for his labours connected with excito-motory action. Much of the vagueness which attended the reference of actions to "sympathy" had been avoided, since excito-motory action had become understood. Local spasmodic movements did occasionally depend on local disease of the nerves of the parts. When the nerves of the skin were injured, as by pressure, actions are excited which are altogether independent of the brain, but perhaps not of the spinal marrow and the ganglia. He believed the paralysis of the hand in painters arose from the pressure of the brush on the nerves of the hand, and not from the action of lead, as was generally supposed; and this opinion acquired some support from the fact, that the disease was confined to the right hand, except in those who were left-handed. The most efficacious treatment for painters' palsy, was blisters applied near the affected part, and the exhibition of strychnine. Distressing eruptions had twice supervened on the employment of this drug in his practice.

Mr Crisp thought many examples of local spasmodic action depended on local nervous disorder, and did not believe that the hand-palsy of painters depended on the pressure made by the brush.

Dr Johnson objected to Mr Pilcher's view of the origin of hand-palsy in painters, and mentioned, that, within the last few days, he had been consulted by a student affected with paralysis of both arms, produced by the daily use of ten grains of acetate of lead, for three months, at the recommendation of a physician, for the cure of diarrhœa, with which he had previously been troubled.

Dr T. Thomson mentioned that the treatment of paralytic cases pursued at the Bath Hospital, by Dr Daniell, was very efficacious. It consisted of the application of blisters over the affected muscles, and of strychnine to the blistered surface.

2. *Case of Nævus.*—Mr Headland exhibited to the Society a female infant, nine days old, the subject of an unusually extensive nævus, and of considerable deformity of the foot and toes. The nævus was of a dark brown colour, somewhat resembling mole spots, slightly elevated, interspersed with a considerable number of small varicose points of veins, about the size of common garden peas, extending from the hip to the toes, and covering almost the entire lateral aspect of the thigh, and the lateral and anterior aspects of the legs. The cellular structure of the extremity was discovered, and the limb was in thickness fully double the opposite one. The infant was in good health.

Monday, Nov. 15, 1841.

1. *Elaterium.—Mania.*—Dr Clutterbuck said that he had lately employed elaterium very extensively in various diseases, and with very striking advantage. When active purging was necessary, no remedy was equal to this. Copious watery stools followed its employment, and the principle on which it afforded relief, was counter-irritation, or counter-excitement. Obstinate inflammatory diseases yield to this remedy when all others have failed. In headache, depending on increased arterial action within the head—in skin diseases, and acute hydrocephalus, this agent proved very efficacious. Hydrocephalic children bear elaterium well, and in considerable doses; and in maniacal affections, both acute and chronic, this remedy proved very useful. A lady, the subject of a recent maniacal affection, attended with febrile symptoms, had been attended by another gentleman and himself for a fortnight. At first, six ounces of blood were taken by cupping, and a blister was applied to the nape of the neck. She had not slept for three days. Elaterium was now given, active purging ensued, and the patient slept for twelve hours. When she awoke her health was much improved. In the course of a day, however, the maniacal affection increased. Elaterium was given, and after copious vomiting and purging, the same benefit followed as upon the previous occasion. Elaterium was repeated every second day

with marked advantage; but when omitted for a day, an aggravation of the symptoms invariably took place. The patient had become calm and collected, and it was confidently expected that she would soon be convalescent. The eighth part of a grain was a powerful dose, the twelfth of a grain was a good dose, and produced free purging. In old works, elaterium was recommended in doses of two, three, and even five grains; but the medicine then used was imperfectly prepared, and comprised much inert matter. Narcotics in maniacal affections were exceptionable means, and frequently induced deceptive sleep. These affections frequently depended on inflammatory action, and he would therefore treat them on antiphlogistic principles.

Mr Headland said, that since the pathology of the mucous membranes had obtained much attention, purgatives had been neglected. Mercurials were too much employed, to the exclusion of vegetable cathartics. He had found elaterium to be very useful in many different diseases, and recommended it to be given in small doses until free purging takes place. Morrison's pills had been efficacious in many diseases, from elaterium being one of their ingredients.

Dr James Johnson had used elaterium for many years, and with great success. The explanation of its action on the principle of counter-irritation, was too vague. Elaterium combined with calomel, produced more watery discharge than other remedies. He uses it in all dropsical affections, in anasarca, ascites, hydrothorax, and in hydrocephalus. Maniacal affections depended on physical lesions of the brain, and it was unphilosophical to attempt their cure by moral means only. Common lunatic asylums were objectionable; for the treatment of the insane should include remedies directed against the physical lesions of the brain. Elaterium, combined with quiet, and mild diet, was highly useful in maniacal affections.

Dr Clutterbuck said that great quackery was practised in lunatic asylums; and the novel mode of treating insanity without restraint, was at once empirical, and dangerous to the patient and to those around him. The Hammell asylum was not more successful than any other well-regulated establishment for the insane. The constant watching of a maniac by keepers, proved more irksome and annoying to him, than the restraint effected by gloves and the like.

Dr Johnson remarked, that if those magistrates who approved of the non-restraint system, saw patients in a state of fever, they would change their opinions.

Monday, Nov. 22, 1841.

1. *On Dropsy and Gall-stones.*—A paper on a case of dropsy and on gall-stones, by Mr Crisp, was read.* In November 1840, a woman, aged 66, affected with ascites and anasarca, came under his care. She had suffered an attack of jaundice, and of spasms of the stomach, about ten months previous. She had been accustomed to a good diet, but did not exceed; and she had lately suffered considerable mental anxiety. The skin was yellowish, the abdomen and legs were considerably swollen, and the urine was not albuminous. Broom tea, with gin, was ordered three times a-day; and the patient took daily pills composed of blue pill, squill, digitalis, and capsicum. In the course of three weeks the dropsy was removed, and the patient was enabled to walk about. Last May, the patient was seen again in the same condition as at first; and after experiencing some temporary benefit from the same plan of treatment, she died.

Autopsy.—The body was emaciated, and the integuments were yellowish. The lungs were healthy; slight pleuritic adhesion existed, but no fluid was found in the pleura or in the pericardium. The heart was slightly enlarged, and the left auriculo-ventricular opening was surrounded by a bony ring. The liver was natural in size and consistence, but was of a pale yellowish colour; the gall bladder was distended with calculi, 506 in number, varying in size from a wheat kernel to a horse-bean. The calculi, which were exhibited, were of a light brown colour, and of rounded surfaces. Mr Crisp had found much benefit from broom tea and gin, in all forms of dropsy unaccompanied by inflammatory action. The case proved that gall-stones might exist without giving rise to any urgent symptoms. Gall-stones originate in a vitiated condition of the bile. Some thought they were produced by an excess of cholesterine; others that they owed their origin to the absorption of the watery part

* This valuable paper is printed in full, in the *Lancet* of Dec. 11, 1841.

of this secretion, while a few referred them to a putrescent condition of the bilious fluid. Women are more liable than men to this disease. Stokes of Dublin calculated that five out of every six cases occurred amongst females. The bilious and melancholic temperaments, sedentary habits, and mental anxiety, predispose to this disease. To supply the want of statistical information in reference to these concretions, a table of 112 cases was constructed. The particulars had been procured from private friends, from various works on the subject, and from French and English journals. Gall-stones had been obtained in each of the cases.

84 occurred in Females.	Number of patients under 30 years .		8
28 ... ... Males.	... ...	above 30 and under 60	68
—	... ...	above 60 and under 75	15
112	... ...	at 81 . .	1
			112

From the histories of these cases, the following inferences were deduced:—

1. That females are more liable than males to these concretions, as 3 to 1.

2. That the majority of those affected with these concretions, are of a bilious or melancholic temperament, and in the middle and upper ranks of life.

3. That mental disquietude, sedentary habits, and "good living," especially in eating, predispose to these concretions.

4. That this disease occurs most frequently between the ages of 30 and 60 years.

5. That fat people are not more subject than others to this disease, and that fermented liquors operate little in its production.

6. That biliary calculi may be present in the gall-bladder, without inducing much inconvenience, and that, in the majority of cases, little structural alteration of the liver and gall-bladder is discovered.

During the passage of gall-stones, the treatment should consist in the employment of morphia, combined with ipecacuanha; the warm bath, and leeches, or even general bleeding may be necessary. Purgatives are highly useful, as are also purgative enemata. Emetics have been used, but are objectionable. Bertin relates a case of rupture of the gall-bladder produced by vomiting. Brichteau mentions, that the application of ice to the side often produces benefit. The recurrence of the disease is to be prevented by a light and regulated diet, exercise, and quietude of mind. Soap, the fixed alkalis, and the infusion of taraxacum, have been considered by some, to be capable of dissolving gall-stones. It is said, that a mixture of two parts of oil of turpentine and one of sulphuric ether, dissolves gall-stones; and Duraude mentions, that he has seen these concretions pass off by the bowels, of the consistence of pitch, under its use. According to an intelligent butcher, gall-stones are most frequently found in stall-fed oxen, brought from Norfolk, Suffolk, Cambridgeshire, and Essex, and which are killed between February and June; while in those which are fattened upon grass, these concretions are comparatively rare.

Mr Headland said, that in different autopsies he had found large gall-stones, though their presence had not been suspected during life. Opium was useful in this disease; emetics were objectionable; and he did not place much reliance on purgatives. He thought that a larger proportion of vegetable food than was usually taken, would go far to prevent the formation and recurrence of the disease.

Dr Clutterbuck thought it was more important to attend to the action of the liver than to the secretion itself. Healthy bile did not deposit. Purgatives were indicated: they acted powerfully on the liver, increasing its action, and rendering its secretion more copious and more dilute. Mercury may be used for a short period. Emetics increase the action of the liver: he has actually employed them thrice a-week. Diluents prove useful, by promoting the action of purgatives, and by rendering the secretions more dilute. Half-a-pint of warm water, or an additional cup of tea in the morning, have been useful in his practice. Stimulating drinks should be avoided; vegetable should be preferred to animal food, and exercise should be taken.

Monday, Nov. 29, 1841.

1. *Gall-stones.*—Mr Leese remarked, that gall-stones occasionally existed in the gall-bladder, without producing much disturbance. He laid before the Society a gall-bladder with a large stone at its mouth, taken from a patient who had died of internal ulceration of the womb. The fecos had been of a natural colour until within

a few weeks of death, when they became very dark. The patient had not suffered jaundice. The liver was double its natural size.

Mr Dendy mentioned, that Dr Buckner complained of dull pain in the region of the liver, and of rigors. An abscess pointed in the region of the liver, and one morning it burst, and two gall-stones fell to the floor. Recovery took place in the course of a week. The same gentleman had another affection in the œsophagus: there were two or three pouches, formed of folds of the mucous membrane, which he was obliged to fill before he could swallow. He usually filled them with coffee.

Dr Clutterbuck remarked, that the mere presence of gall-stones was of little importance. They were found in bodies dead of other diseases, and they gave rise to no unpleasant symptoms, till they were passing through the ducts. The great object should be the prevention, and this was best effected by emetics and purgatives. It was in vain to look for solvents of these concretions.

2. *Morbid Appearances in the Uterus.*—Mr Hooper placed before the Society the uterus of a female, 42 years of age, who, it was supposed, had died from the exhibition of laudanum. She used to suffer pain in the back during menstruation, and *in coitu*. The menstrual discharge had been more than usually frequent and copious. On the fundus uteri, there were two large, hard, semi-cartilaginous tumours, which Mr Hooper regarded as scirrhous. The body of the uterus was much reduced in size.

Monday, 6th December 1841.

Dr Alison read a paper on the contractile effects of the uterus, and on some points of obstetric practice. This memoir we have received, and intend printing in next number.

Dr Marshall Hall observed, that the Society was much indebted to Dr Alison, for having so ably brought before them the interesting subject of this paper. It was difficult to select from the many topics the author had discussed. It was the "embarras des richesses"—but Dr Hall would briefly notice one or two. There could be no doubt that the action of the uterus in parturition was a function of the spinal marrow, as distinguished from the cerebrum and the ganglia, the other subdivisions of the nervous system. Mr Olivier had related a case of parturition, perfect in every respect, in a patient suffering paraplegia: the disease was one of hydatid tumour, compressing the spinal marrow, between the first and fourth dorsal vertebræ. M. Brachet details a case of paraplegia, in which there was complete inertia or inexcitibility of the uterus, and though former accouchements had been speedy, it was in this case necessary to use the forceps. The seat of the disease is not mentioned, but he imagined it must have been so low in the lumbar region, as to have interfered with the reflexures of the incident and reflex nerves, and the spinal marrow. There are several interesting facts which bear upon this subject. In the common hen, an egg is deposited prematurely, if the border of the cloaca be irritated by a few grains of salt. If the tail of the turtle be separated from the rest of the body, together with the cloaca, in the ordinary manner of the cook, and if the cloaca be distended with water, this water gushes out, on irritating the integuments, a little higher than the sphincters. The lower portion of the abdomen of the female libellula, deposits eggs in the proper season, on being shaken about on rough paper. There are cases on record of the human fœtus, born after the actual death of its parent, the spinal function having survived that of the brain and of the heart. These facts bear out Dr Alison's views.

Mr Dendy believed in the doctrine of excito-motory action, but thought that volition acted in defecation and in urination. The uterus was under the influence of the brain: if otherwise, why did mental emotions affect its action?

Mr Elliott enquired how mental emotions sometimes induced labour, and sometimes suspended it, if the uterus were unconnected with the brain.

Dr Theophilus Thomson knew of a case in which the uterus, after death, expelled a fœtus. The uterus possessed contractility independently of the spinal marrow. John Hunter had denied that nerves grew; but this was erroneous; for, during pregnancy, the nerves and ganglia of the uterus became much developed. Perhaps the medulla spinalis elaborates the nervous influence, and the ganglia serve as reservoirs.

Mr Pilcher said that uterine contractions were connected with excito-motory action. Mental impressions sometimes induced and sometimes suspended uterine

action, and this proved the existence of a connection between the brain and the uterus, the same as subsisted between the brain and other parts. The excito-motory nerves terminate in the grey matter of the medulla spinalis, while the nerves of volition and sensation run up into the brain itself: the dissections of Grainger had proved this fact. Grey nervous matter, wherever introduced, elaborates nervous force; the ganglia formed a beautifully connected chain throughout the body, subservient to excito-motory action. Mr Pilcher agreed with the author of the paper in regarding the embryo as the stimulus of the uterus.

Dr Marshall Hall explained the influence of the mind upon labour, by the connection which subsists between the brain and the uterus, the same which exists between the brain and all parts of the body.

Monday, 13th December 1841.

The discussion on Dr Alison's paper on the contractions of the uterus was resumed. Want of space obliges us greatly to abridge the report which we have of the debate.

Dr Marshall Hall was anxious to confine the attention of the Society to the facts of the question before it. On removing the cerebrum, certain phenomena were removed; these were those of sensibility and of voluntary motion. Those actions, which he (Dr H.) would beg to call spinal rather than excito-motory, and those of the ganglionic system remained. On removing the spinal marrow, the spinal actions or excito-motory phenomena ceased in their turn; the function of respiration ceased; deglutition, and the action of the sphincters are annihilated, with all those actions which have been denominated sympathetic, and a series of facts observed by Redi, Whytt, and others. If the experiment be properly performed on the frog, the circulation may remain vigorous, and may be effected through the medium of the ganglionic system, which now remains alone. However familiar the acts of ingestion and of egestion, and the actions termed sympathetic, have of course long been, they were not formerly referred distinctly and exclusively to the spinal marrow. Now, that the action of the uterus in particular is a spinal action, seems to be proved by a variety of circumstances. The whole of the act of parturition, and therefore, the art of midwifery, depends on this principle of the spinal marrow, or excito-motory action. An interesting fact affords a proof of this view of the subject: in protracted uterine hemorrhage, a douche of cold water induces sudden contraction of the uterus, and arrestation of the hemorrhagy. Might not lingering labour be hastened by the same measure? Another fact of the same kind, is that of the introduction of the hand within the uterus, well known to practitioners of midwifery. The effect of the douche in uterine hemorrhagy, was not that of the mere application of cold. The constant application of ice produced no such effect. It was the sudden change—the sudden impression on the nerves, which induced contraction of the uterus; just as the dashing of cold water on the face, or on the general surface induced sobbing inspirations. The same principle would guide us in the treatment of syncope and asphyxia. The surface to which the douche is applied should be first warmed; the impression of the cold may then be secured.

Dr Chowne said, that it was incorrect to maintain, because certain excito-motory actions continued for a time after the removal or destruction of the brain, that these actions did not really depend upon this organ, for the brain might impart an influence which may last for some time. There was such a thing as "prospective store" in nature. Eating is essential, yet a man may exist some time without food. He would not conclude, that because excito-motory movements took place after destruction or removal of the brain, this organ was not subservient to them.

Dr Hall remarked in reply to Dr Chowne, that the fœtuses, in which the brain, and the brain and spinal marrow never did exist, afforded a sufficient proof that the spinal marrow is not merely charged by the brain, or the ganglia by both. Here the battery is charged without the electrical machine.

Dr Clutterbuck considered the subject of the paper before the Society one of great importance, and hoped it would be resumed at next meeting, when, he trusted, the distinguished visitor, Dr Marshall Hall, would favour the Society with his presence.

Monday, Dec. 20, 1841.

1. *The Discussion on Dr Scott Alison's Paper* was resumed, Dr Clutterbuck, Mr Hird, Mr Proctor, Dr Bennet, Mr Pilcher, Dr Thomson, and others, joined in the debate, which want of space forces us to omit.

The Society then adjourned till after the Christmas holidays.

ROYAL MEDICAL SOCIETY OF EDINBURGH.

The following is the list of Office-Bearers for the present session:—PRESIDENTS—John Goodsir, Esq., M.W.S.; Henry Lonsdale, M.D., F.R.C.P.E.; Edwin Thorne Wait, Esq., M.R.C.S.L.; William Scott Carmichael, Esq., L.R.C.S.E. CURATOR—A. Halliday Douglas, M.D. HONORARY SECRETARIES—Henry Reid, Esq.; Theodore Wood, Esq. The ANNUAL DINNER took place in Barry's Hopetoun Rooms, on Wednesday the 22d December. Mr Goodsir was chairman, and the other presidents croupiers. Forty-five sat down to dinner, among whom were Professors Sir George Ballingall, Sir Charles Bell, Christison, Alison, and Graham, Drs Huie, Marr, Beilby, Allen Thomson, and Cormack. The speeches, the songs, and the wines seemed to give universal satisfaction.

The DISCUSSIONS AT THE ROYAL MEDICAL have been interesting, and shall be reported in next number, and regularly afterwards.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Wednesday, 1st December 1841.

The following gentlemen were elected Office-Bearers:—

PRESIDENT—David Maclagan, M.D. VICE-PRESIDENTS—W. Brown, Esq.; John Gairdner, M.D.; J. Y. Simpson, M.D. COUNCIL—Dr J. S. Combe; Dr W. H. Thomson; Dr Patrick Newbigging; Dr Henderson; Dr John Moir; John Goodsir, Esq.; James Muller, Esq. TREASURER—Robert Omond, M.D. SECRETARIES—Douglas Maclagan, M.D.; and James Duncan, M.D.

The report of the other proceedings, want of space obliges us to postpone.

HUNTERIAN MEDICAL SOCIETY OF EDINBURGH.

On the 24th November this Society elected the following Office-Bearers: PRESIDENTS—Henry Lonsdale, M.D., F.R.C.P.E.; George Mackay, M.D.; William V. Drury, Esq.; J. G. Laing, Esq. HONORARY SECRETARIES—Alfred Parr, Esq.; F. William Irvine, Esq.

ANATOMICAL SOCIETY OF EDINBURGH.

PRESIDENT—Robert Paterson, M.D. VICE-PRESIDENT—John Goodsir, M.W.S. SECRETARIES, Drs Kennedy and Bell.

OBITUARY.

On Saturday, 4th December, David Daniel Davis, M.D., aged 64, till within a fortnight of his death, Professor of Midwifery in University College, London, and Physician to the University College Hospital. Dr Davis was physician-accoucheur to the Duchess of Kent at the birth of Her Majesty Queen Victoria.

On the 1st December, George Birkbeck, M.D., aged 69, the originator of the London Mechanics' Institution, and formerly Professor of Natural Philosophy to the Andersonian Institution, Glasgow.

On the 8th December, David Don, Esq., Professor of Botany, King's College, London.

On the coast of Africa, Mr Nightingale, Assistant-Surgeon to the Albert, and Mr W. B. Marshall, Assistant-Surgeon to the Soudan.

At Castle Douglas, James Halliday, Esq., M.D.

ERRATA.

P. 886 (Dec. No.) of the volume for 1841, *for* "gut did not pass," *read* "gut did pass."

P. 906 of same No., line 15th from bottom, *for* "right ventricle" *read* "left ventricle."

TO CORRESPONDENTS.

We have enlarged the size of the present Number, but have nevertheless been obliged to defer the publication of much valuable matter. To write succinctly, and at the same time clearly, is difficult; but were this more attended to we would seldom have to decline papers.

Communications have been received from the following gentlemen:—T. Wilkinson King, Esq., of Guy's Hospital; H. P. Robarts, Esq., London; Dr S. Scott Alison, London; Dr Marr, Edinburgh; Professor Anderson, Glasgow; Dr Richardson, Melrose; and Dr J. R. Russell, Edinburgh. If possible, all of these papers will appear in next Number. The list of BOOKS RECEIVED is delayed from want of room.

THE

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FEBRUARY 1.] No. II. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*On the Open State of the Ductus Arteriosus after Birth; with Illustrative Cases.* *By* T. WILKINSON KING, *Lecturer on Comparative Anatomy and Physiology, and on Pathology at Guy's Hospital.*

ANALYSIS.*—The means by which the Duct is closed—the most common cause of its persistence in the Pulmonary Artery—other causes—in the lungs (?)—narrowing of the Aorta—*annular contractions*, &c.—Cases and Remarks.

THE healthy condition of the ductus arteriosus is rarely disturbed, and the part itself ceases so early to be of any material importance, that a notice of its irregularities may be deemed little worthy of attention.

As, however, the considerations I have to offer involve some useful explanations relative to the circulation, I would hope that the filling up a little chasm in the history of this subject will not be unavailing.

In the *Medical Gazette* (July 10th, 1840) I have attempted to give some account of the closing of the ductus arteriosus, and

* See also the conclusions at the last page.

adverted to the states of animals and of human malformations, in illustration of the opinion, that at the moment of birth the left bronchus compresses the ductus arteriosus, and also renders its communication with the aorta less direct, and thus induces the closing of the blood-vessel. The following is a brief explanation of this opinion.

"In fœtal life the air-tubes contain only a little fluid; they are probably but partially expanded, while the circulation is nearly single and equable; the auricles are pretty equally full at all times, and the ventricles equally powerful. The chest continues of limited capacity, the diaphragm high, and the lungs confined about the heart. We may now reflect upon the principal effects of the first inspiration. A general expansion is made, which is never again to have its commensurate collapse; and although that fulness of the lungs (as to air), which may be regarded as necessary and permanent, be not obtained till later, it seems pretty evident that the first inspirations must have a far larger share than any others in effecting this condition. Now the trunk becomes straighter, the neck is no longer bent forwards on the breast, and the trachea is elongated; the diaphragm, and with it the heart, is considerably drawn down, while the lungs are generally expanded, but most particularly outwards; and one particular result of all these changes, I imagine to be, that the left bronchus is rendered more full and tense, and also raised, at the same time that the ductus arteriosus is drawn down with some force, and perhaps with some disposition to elongation."

"In fine, it is to the sudden and intimate cross contact of these two tubes that I would mainly attribute the closing of the blood-vessel, which is in a manner bent over the bronchus, and has also a more oblique direction given to its communication with the aorta."

I would not be understood to exclude the idea of any other possible influence, although, as I have shown, there are some interesting facts in comparative anatomy and pathology which seem to corroborate the view I have unfolded.

The present inquiry, though confined to an opposite condition, will hardly fail to throw light on the natural states of the part with which we are engaged.

The fact that the ductus arteriosus may remain open in various states, and in dependance on different causes, seems to me to deserve a few brief explanations, not only for its own sake, as a curious matter, but as illustrative of general principles of the circulation, which are of essential importance in the study of diseases and of remedies. The following reflection depends, I think, upon sufficiently established facts; my subsequent remarks will be supported by somewhat rarer examples; but I amnot con-

scious of overstraining either the facts themselves or the inference drawn from them.

If " the pulmonary artery be closed at its origin only (congenitally), the arterial ductus remains open after birth, seemingly by the force of the current from the aorta, which is filled by the two communicating ventricles; but if the mouth of the artery be open, even in a very small degree, the duct becomes as thoroughly closed as ever, although the two ventricles still communicate freely; that is to say, that no force from the aorta, short of the entire current claimed by the pulmonary arteries, is sufficient to keep open the ductus arteriosus; and this there is abundant evidence to prove." [1]

The mouth of the pulmonary artery being impervious, is, I presume, the most frequent cause of persistence of the arterial duct after birth.

One of the most frequent instances of malformation of the heart, presents the root of the pulmonary artery narrowed, and its crescents more or less imperfect; but the ductus arteriosus in such cases becomes a cord, as uniformly I believe, as under the most natural circumstances.

The cases in which the aorta is congenitally very small at its origin are rare, but it would seem that the result of this narrowing is to maintain some, though often inconsiderable current through the ductus arteriosus, and the great pulmonary artery is consequently and proportionably enlarged.

I conceive the fault here to commence with the contracted aorta, which is not adequate to the emptying of the left ventricle. This may explain why the communication between the two ventricles has not become closed, and why the enlarged pulmonary artery in such cases seems to arise from the two cavities at once. These rare cases I have formerly adverted to.[2] They are described by Dr Farre, and the specimens have been preserved in the museum of St Thomas' Hospital, by Sir Astley Cooper.

Here, however, it is desirable to remark, that the two vessels supplying the descending aorta, from the arch and from the pulmonary artery, are sometimes manifestly inadequate, when their diminutive size is compared with the vessels into which they empty themselves; and we must remember that it is at least possible, that some collateral branches of the subclavians may assist to supply the lower parts of the body.

We shall find in other examples that this supposition becomes more probable, and, finally, that it is an almost unavoidable inference.

When the ductus arteriosus remains after birth, as it existed previously, that is, without any marked arterial changes, the con-

[1] *Vide* Med. Gaz., as above.

[2] *Vide* Med. Gaz. for 1840-1, pp. 685 and 751.

tinuance of life is very short,—scarcely exceeding a few days,—and it is attended with extreme distress.

On the whole, I believe, however, the occurrence is very uncommon. It is one which I have had no opportunity of inquiring into, so as to seek an explanation of its peculiar circumstances.

Dr Farre has related some particulars of a girl, who at birth seemed only rather weak and icteric. An occasional threatening of suffocation when she sucked, unusual quietness, and perpetual drowsiness were remarked during the first week.

"In the course of the second week she had fits of crying, generally in the evening, and her breathing was very remarkable. She would take a deep and long inspiration, sobbing once or twice during the time, and afterwards breathe very quick. Presently the inspirations would be short, and the expirations uncommonly long, until she was roused with a sort of convulsive sob, attended with a slight crowing noise. This peculiarity in the respiration was manifested chiefly after sucking or crying. The paroxysm being over, she would fall asleep and breathe easily, perhaps more quickly than natural, but start frequently. On the 14th night, the fit of crying was more severe than on any former occasion, and for several moments the breathing was suspended, the lips becoming black, when a strong convulsive effort with a deep sigh restored animation. This took place repeatedly for about an hour, but afterwards the night was passed quietly. On the 15th and 16th days, the breathing became more and more disturbed; but the evening paroxysm of the 17th was thought to be less violent than the preceding ones, and the night was passed more comfortably. On the 18th morning the child took the breast with less suffocation than usual. The skin and eyes remaining very yellow, and the feces deficient in bile, a grain of submuriate of mercury and four grains of rhubarb were given at four o'clock in the afternoon. The child slept about an hour, awoke, and vomited a part of the powder, was soon afterwards apparently in much pain, and screamed violently. In this paroxysm the breathing was frequently suspended for more than a minute, the lips were black and the eyes fixed. A medical gentleman in the neighbourhood administered a dose of castor oil, some assafœtida, &c.; but at eight o'clock, when Mr English saw her, she appeared to be dying. The extremities were cold, the countenance cadaverous, the lips black, the breathing, by short convulsive inspirations, and long groaning expirations, with now and then a sigh. On putting her into a warm bath, it was surprising to see the improved state of respiration; the expirations being assisted by gentle pressure on the abdomen and ribs. This treatment having been continued for half an hour, she was wrapped in warm flannel, and seemed to sleep for an hour, when the breathing gradually got worse, and all the former train of symp-

toms returned. The warm bath was again resorted to, with the same benefit as before; but, on taking the child out of the bath, she soon ceased to breathe, if left to her own efforts. He therefore kept his hands constantly on the thorax and abdomen, and, by assisting the expirations, prolonged her life for about two hours. For ten minutes together she sometimes lay without the least appearance of life, when a strong convulsive action of all the muscles of the thorax and abdomen, with a deep sigh, and several catching sobs, renewed the circulation. Then the colour would return to her lips; she would stretch her limbs and open her eyes. The last struggle of this kind took place a quarter of an hour after he supposed that she was dead. He never could feel the pulsations of the heart, although he frequently examined the region of that organ. The pulsations of the radial arteries, he once observed, were synchronous."

Dr Farre notices no appearances as morbid, besides a free communication between the auricles, the ductus arteriosus being open, and wider than natural, the pulmonary artery proportionably larger, and the liver turgid with blood. I have no definite explanation to offer in this instance, with respect to the cause of the non-closure of the ductus arteriosus; but it remains to be remarked generally, that besides the possible impediment in the first part of the aorta, and besides the considerations relative to the possible misplacement of the left bronchus, we might expect that a certain state of pulmonary obstruction should leave an undue share of blood in the great pulmonary artery, to be disposed of in the original manner of the fœtus, and that thus the ductus arteriosus might persist and become even wider than is natural. Again, also the circulation of dark blood to the brain assists to annihilate the inspiratory efforts by which the stream through the ductus arteriosus is augmented.

There is a peculiar form of contraction in the aorta, which has probably been often noticed, but which is most frequently slight, and of small apparent consequence. I refer to an annular and sudden diminution of its passage immediately *above* the junction of the ductus arteriosus or its cord.[1] This might be compared to the effects of a ligature, were it not more marked within than without. It is most common in the form of a partial ridge, overlapping the closed opening of the ductus arteriosus; but it may be found in every degree, even to the complete closing of the aorta. In its moderate forms, it is important as an occasional cause of obstructions in the heart, and also of the persistence of the ductus arteriosus. The museum of Guy's Hospital contains a variety of these appearances. The following case I suspect to be not very unique:—

[1] The like contraction may occur below this point, or precisely upon it.

NARROWING IN THE AORTA—DILATED HEART—OBSTRUCTED LUNGS —COMA.—*November* 11, 1834. John Blaze, aged thirty-three, stated himself to have been ill three months, with serious symptoms of chest obstruction, and manifest overaction of the heart. Pneumonic changes were detected, and a violent *bruit de scie*. After two days' observation, he sank in a state of coma.

Autopsy.—The body was very stout; the cuticle ready to separate; the legs slightly œdematous; the abdomen tympanitic and green; the skull square, and very capacious. The brain was examined imperfectly only; there was but a little fluid about it; the corpus callosum was not arched or fluctuating; the pia mater seemed generally a good deal injected; there were several old slight threads of adhesion beneath the anterior cerebral lobes. There were considerable old firm adhesions in both pleuræ. The lungs were very large, œdematous, turgid, and emphysematous; a portion of the inferior external edge of the left contained wide, membranous, dilated bronchial tubes, and the middle part of this lung posteriorly was uniformly dark, fleshy, tough, and airless.

The bronchial lining was thick, injected, and coated with viscid secretion; the pericardium was pretty healthy, excepting a little reddish secretion; the heart was full twice the natural size, dilated and distended with black grumous blood. All its cavities seemed dilated, and also hypertrophic. The foramen ovale would admit a goose quill obliquely; the pulmonary artery was very wide; the mitral valve a little fleshy and granular; the hypertrophy of the auricles was considerable; that of the ventricles less so; and that of the left the least. All the valves were possibly more or less imperfect, from the widening of the cavities (?) The tricuspid was doubtless an extreme safety valve. The aorta ascendens was wide; there was a ring of constriction (simple and congenital) in this tube, at the left end of its arch. The vessel was here reduced one-third in diameter.[1] Its general lining seemed not very decidedly rugous, and was indistinctly and minutely undulating. The liver was small, but pretty healthy, with the exception of a distinct, though slight and minute myristication. The gall-bladder contained a very little good ropy bile. The spleen was pretty healthy.

The kidneys were of full size, rather soft and coarse in texture, and fully injected. The bowels, independently of cadaveric changes, were in pretty good condition; the interior of the right half of the stomach was mamelonate, and red; the rest was much more pale, and perhaps slightly dissolving.

This man does not seem to have had the development of his frame interfered with. The particular development of the head

[1] No. 2805, in the Museum.

is not, however, to be disregarded, nor the mode of his death. On the whole, the state of the heart was rather peculiar, and in accordance with the existence of obstruction.

The evidence of old bronchial affection at his age was very great; and this state also was probably dependent on the aorta.

The *bruit de scie* I am not inclined to refer to the narrowed passage.

The connexion which such a case as the foregoing might have with the state of the ductus arteriosus, will be best explained after relating a similar one in which the duct is left open. Some reflections, however, are proper to the case just related. We must conclude, that the delay in the ascending aorta would be increased near the moment of birth; and we should expect the lungs to participate in the difficulty. We know that both the lungs and the left ventricle are required to transmit blood more freely at this time than before; and we may understand, that although some facility of supply may arise by collateral circulation to the descending aorta, the tendency to persistence in the ductus arteriosus should be increased, that is to say, if the currents within be the only influential causes, and if some external agency, as that of the bronchus, be not concerned in closing the tube.[1]

June 19, 1841. Stephen S., aged 21, in a state approaching to typhus, with evident symptoms of pneumonia, was examined by Dr Addison, who listened to the sounds of the heart, without discovering any marked peculiarity. There were no indications of heart disease. He died on the second day after that of his admission.

This was a well-made body, scarcely slight, having a little fat, and a narrow low frons. The anterior part of the great falx was deficient, and on each side of the vertex was a slight diffused ec-

[1] It may not seem useless to subjoin another case of this kind, for the sake of comparison:—

February, 1834.—John H., aged thirty-eight, was admitted with nodes and extensive ulcers; he became icteric, and after a few weeks was carried off with severe bronchial obstruction.

The body was well formed, slight, and moderately fat. A little fluid was found in the pia mater. The *lungs* were large, full, œdematous, and a little emphysematous. The larynx and trachea contained a very abundant muco-purulent secretion; the bronchi contained a tenacious dull mucus. There was a slight fibrinous effusion of pericarditis. The heart was of good size; the left ventricle was somewhat *too thick*; the mitral a little ossified, and also the aortic crescents, which were only two, but seemed to act well. The ascending aorta was *dilated*. The end of the arch (close above the ductus arteriosus) presented a firm simple *annulus*, which would not admit the little finger. (No. 1450[76], in the Museum.) The great arteries of the arch were not large. To the right of the constriction the aorta was decidedly narrow and thin, and beyond it rather bulbous, thick, and atheromatous; one or two intercostal arteries seemed wide, and unequally thick. The liver was enlarged, and close-textured. A calculus obstructed the neck of the gall-bladder. The spleen was large and fleshy. The kidneys were somewhat mottled, and their tubuli contained sabulous matter.

chymosis beneath the pia mater, and (between the two convolutions) softened and ecchymosed brain, not equal in extent to a filbert; most on the right side. There were slight cerebral effusions and dulness of the membranes. A large artery from the middle of the basilar ran in to the right cavernous sinus. The pleuræ contained half a pint each of fluid or more, and were coated with scanty adherent grainy fibrin. The lungs were large, crepitant, and somewhat watery, and variously hepatized in many portions, firm and pale, or soft and apoplectic. The pericardium presented an old adhesion, some opacities, and minute injection. The right auricle was small and thick, the right ventricle smallish and very strong, the moderator band short and thick, the tricuspid curtains were quite clear. The ductus arteriosus (No. 1383[80] in the Museum) was wider than a common lead pencil, and very short, and its surfaces coated with tumid semitranslucent broken fibrin (?) A similar patch, as large as a halfpenny, on the left wall of the great pulmonary artery. The pulmonary crescents were healthy. The left auricle was wider than the right; also thick and opaque within. It had no material communication with the right. The mitral valve was a little opaque, and also the lining of the left ventricle. The cavity was very large and thick, and, as well as the right, very firm. The aortic opening was wide; its valves were only two, but still probably efficient. Immediately to the right of the ductus arteriosus, the aorta was contracted simply to less than half an inch in diameter; and close to the left of this, on the convexity of the tube, was an incipient defined aneurism; a circular patch, as large as a penny, of inflammatory softening, and yielding of all the coats.

There were slight but evident traces of peritonitis. The left kidney was not half as large as is natural; dark, coarse, and flabby; almost soft, with rather wide cavities. The left was more than as much too large and dull, and almost ecchymosed; it was extremely coarse, and rather soft. A spot larger than a bean was whitish, yellow, and dense from subsided inflammation. The rest was rather sparingly sprinkled with small recent inflammatory deposits, more or less opaque, and in a few points semipuriform. The bladder was clear; the liver large, tumid, firm, and but moderately turgid; the spleen was much too large, and very much softened.

Now, here I do not hesitate to conclude, that the constriction in the aorta was the cause of the persistence of the ductus arteriosus; that is, that after birth, the filling of the descending aorta required to be completed through the duct, and that it remained unclosed in consequence of the continued and strong current through it. The obstructions to the circulation from the left ventricle would be a source of impediment in the lungs, and

thus again the current would be still more directed through the duct.

The last remark would apply with the more force, supposing the existence of or disposition to local disturbances, as in the lungs; but under the most favourable circumstances of easy health, we must suppose that all would go on with considerable facility, that almost all the blood of the right ventricle would be easily transmitted through the lungs, and that any diminished degree of distension in the descending aorta and its first branches would tend to induce collateral circulation of better blood from the subclavians.

In the case last related, the state of the right ventricle was characteristic of the want of safety valve, that is, of the persistence of the fœtal condition both as to strength of action and the incapability of effecting a refluent action; and such a state is a very material source of difficulty, under all the circumstances in which restoring efforts are called for, as, for example, in bronchitis.

A case related by Mr Nixon in the Dublin Medical Journal, appears to me to resemble the last. The duct was pervious, and the aorta simply contracted, by a transverse ridge, to about one half of its natural size. For my knowledge of this case, I am indebted to Dr Craigie.

The reader will find other cases of open ductus arteriosus quoted by Dr Farre, in *Pathological Researches*, No. I.; but the facts do not seem sufficient to allow of any attempt to explain the persistence of the tube.

Louis (*Mémoires*, p. 320) quotes the case of a bold man, of 40 years of age, with a good deal of livor, who sank after a small bleeding. The ductus arteriosus was as wide as a large goose quill, the pulmonary artery dilated, and the septum of the ventricles pierced with an opening half an inch in diameter. Here, I conclude, the aorta was too narrow. He quotes a second case, of an individual aged 29. The heart was excessively large and thick, the foramen ovale was very wide, the ductus arteriosus open, the pulmonary artery narrow, and the aorta wide. Here, again, it seems apparent that the open duct was maintained in consequence of the unequal distension at its two ends from birth, and that it served to equalize the balance, or rather to help the pulmonary circulation.

This explanation must appear at variance with the conclusion at page 85; but, in the absence of fuller details, I am compelled to leave it thus. I doubt, however, that the inquirer will carry these views with him, without finding other facts which they assist to explain.

In the next case the ductus arteriosus is again involved, but probably from another cause. It is related by Dr Graham.

Henry F.,[1] aged 14, a weaver at Glasgow, active, and stout, and florid, was admitted to the Infirmary, August 3, 1813. Two weeks previous he had taken cold, which produced a severe bronchitic attack followed by fever, vomitings, &c. Palpitation and dyspnœa continued through a doubtful convalescence. He perspired chiefly on the upper parts of his body. October 6, he was reported cured. November 13, he was re-admitted with dyspnœa, great beatings of the carotids, and pain in the left side.

In December a febrile attack introduced vomitings and perspirations, and he sank with continued chest oppressions on the 2d of January.

The pericardium was found thin. The heart was nearly twice its healthy size. The walls of the left ventricle were about an inch in thickness, but no other derangements in the structure of the heart or its valves were observed. The capacity of the cavities seemed natural. The ascending aorta and its branches were much dilated, but the aorta was contracted towards the end of the arch, being very narrow for about three-quarters of an inch of its length. "After its union with the ductus arteriosus, it was completely impervious, and the appearance was exactly as if a ligature had been tied tightly around it."[2]

Below the stricture, the aorta expanded suddenly and freely, and received or gave off considerably dilated but attenuated vessels. "A probe passed from the pulmonary artery along the canalis arteriosus to the stricture, but, from its thickness, it did not seem probable much communication by means of it could have been allowed."

The mammary arteries, &c. were much dilated.

Here it is, I think, pretty evident that the contraction had come on only slowly after birth, giving time for the collateral circulation to establish itself. It is clear that the ductus arteriosus had been well developed, and I conceive it is certain that the duct had continued fairly pervious until birth, and not that the fœtal lungs had transmitted all the blood of the right ventricle.

We are therefore left to conclude that some peculiar cause (as inflammation) induced the contraction of the aorta, and that in consequence the duct had been kept open for a time.

In the following instance I cannot suggest any cause for the persistence of the duct, and I can only advert to the like, as deserving of closer inquiry, when the opportunity presents itself.

The case was carefully noted by Dr Chevers and Mr Molloy,

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[1] See the 5th vol. of the Med.-Chir. Transactions. This, as well as the two concluding cases, are much abbreviated and from the writings of others. As I employ them for a distinct object, it is, I hope, needless to make any apology.

[2] This applies only to the actual termination or lower end of the contraction.

and the **ductus arteriosus** is preserved in the Museum. (No 1383[65].)

October **1837.**—Eliza Kirwin, aged 32. "A pale emaciated woman, usually employed at needlework. Has had eight children, five of which are living and are healthy. She has never been strong, but yet suffered no severe illness. Has had no cough till of late. Last winter she caught a bad cold accompanied by cough, which left her on the return of spring. Three months since she became affected with severe rambling pains, which, commencing anteriorly, finally settled about the right scapula; these were accompanied by cough, but no expectoration. A month subsequently, however, expectoration of ropy mucus appeared, and with it night sweats, and loss of flesh. She had no medical advice, and continued employed till two weeks before her admission. Her breathing is now hurried, face rather livid, with a blush on the cheeks; she is emaciated, the voice is weak and husky, cough, expectoration muco-purulent, and her appearance is generally phthisical."

After diarrhœa, an increase of the dyspnœa seemed to carry her off.

The body was greatly emaciated, but tolerably proportioned. There were various vestiges of violent pleuritis, and the greatest extent of tubercular disorganizations in the right lung. "The left lung offered incipient tubercular formations and vesicular emphysema. The heart was small and pale, its right cavities were little distended, the tricuspid and sigmoid valves healthy. The foramen ovale would allow the passage of the little finger; it was partially guarded by a wide and thin valve, attached above and below by four or five short weak cords in the right auricle; it would probably have acted imperfectly in preventing the passage of blood from right to left. Upon the left side, the auricle and bicuspid valve were healthy. The ventricular walls were hypertrophied, and the cavity was so contracted as to press the forefinger passed through the auriculo-ventricular opening. The ductus arteriosus was sufficiently open to allow the passage of the largest probe from the aorta into the pulmonary artery, but upon this side its orifice was guarded by a small nipple-like process, resembling in form the granular masses sometimes noticed upon the aortic valves; the apex of this was fissured, allowing the passage of blood or an instrument from the aorta, but apparently acting as a valve in the contrary direction. The aortic orifice of the duct was wide, and surrounded by specks of white deposit, evidently the result of attrition by the passage of blood. The liver was large, tolerably firm, and slightly congested. The spleen was rather above the usual size, dark and firm, its artery very tortuous, and presented contractions almost resembling cicatrices at its greatest curves. The kidneys were greatly enlarged and

darkly congested; their capsules separated easily, their secreting portions were coarse and hypertrophied."

It is not to be concealed, that the annular contraction of which we have spoken occurs most often without any attending irregularity in the ductus arteriosus.[1]

It does not, however, seem very difficult to approach the explanation of the closure of the duct in the majority of these instances.

I shall introduce one or two different examples of such cases, with the hope of strengthening the few comments I have yet to add to the subject in hand.

A gentleman, aged 57, a free liver, and subject only to severe winter cough, on the 7th of April 1809, was affected with cough and dypsnœa in an unusual degree. At five in the morning, Mr Winstone was called to him. He had pain under the sternum, cold extremities, anxious expression, and a pulse rather weak and much altered in frequency, but regular. He now, on being urged, walked up stairs, and very suddenly expired. After death, Sir A. Cooper[2] found a large quantity of blood in the pericardium, and an oblique and lacerated perforation of the wall of the right ventricle anteriorly, involving a branch of a coronary vein. The aorta, where joined by the canalis arteriosus, was abruptly contracted, so as with difficulty to admit the little finger. The pulmonary artery, when laid open, was observed healthy, and the left side of the heart also.

I am by no means willing to admit that this gentleman's long-standing ailments were independent of the aortic impediment, but his death seems in part referable to the established pulmonary obstructions, of which it is to be observed, that they may have assisted to keep the fulness, and exertion, and strength of the left ventricle in easy proportions.

The ductus arteriosus was doubtless closed; and this is the place in which I have preferred to consider the method by which its patence is obviated in similar cases.

It is well understood that the duct remains freely open in the not very rare case of deformity, in which the end of the arch is sealed up by the annular contraction; and it is not further necessary to prove that the slighter degrees of the annular contraction have no influence in keeping the duct open. Next, we may suppose that, with a certain mean degree of annular contract, the duct at birth has a great tendency to remain open, and yet

[1] Of course it is also to be admitted, that the ductus arteriosus may sometimes be found pervious in the absence of the annular contraction, as also of all other causes; that is, as far as investigation has hitherto been carried; but what has been said of the several causes of patence of the duct, will, I think, suffice to make it appear rather that research is deficient, than that explanations are of necessity inaccessible.

[2] See the case of ligature of the aorta, Surg. Essays.

that the power of the left ventricle is soon employed to establish collateral channels under favour of the most plastic state of parts. Now, the more the collateral supply is increased, the more the duct is left to its natural course, subsequently and gradually; and this seems to me the chief part of the account of the rarity of an open duct, and of the appearance at other times of a thick and almost impervious vessel, as in the case of Dr Graham, one step beyond which I would place the following.

The body of a female,[1] of about 50 years of age, was injected and dissected at the Hôtel Dieu in 1789, by M. Paris. The end of the arch of the aorta was contracted to the size of a writing quill, the passage extremely small, and the freest inosculations were discovered on all sides. There does not appear the smallest room to doubt that the ductus arteriosus was naturally closed. This I conceive was a tubular contraction (not merely annular) of the aorta; and I am disposed to compare its course to that of Dr Graham's case, supposing the contraction to have occurred gradually after birth, and the ductus arteriosus to have become gradually closed.

The cases lately collected in the *Edinburgh Medical and Surgical Journal* by Dr Craigie, (whose paper I have only become acquainted with at this point of my inquiry,) appear at first sight to be all of this kind, and to afford very interesting evidence of processes which still need proof. It will not be difficult to define my own views of them; but I shall first advert to some of Dr Craigie's opinions. "It seems, therefore, that the obliterating action, which had taken place in the ductus arteriosus, had been, from some peculiar cause, prolonged into the aorta, and had there given rise, first to contraction, and then to obliteration of the coats of that vessel.[2] The difficulty is to know, in this case, what this peculiar cause was, or how it operated. We know that in the case of the ductus arteriosus, obliteration of the interior of that vessel is the effect of the blood ceasing to flow through it, the blood being directed in another channel. But why this should have happened to the aorta, it is not easy to discover, unless we could see some other course by which the blood was to find its way through the abdominal aorta and the arteries of the lower extremities."

I am by no means willing to suppose, with Dr Craigie, that the establishment of a collateral circulation precedes the impediment in the aorta, since all analogy shews that the impediment is the cause. The dilatations, hypertrophy, and chronic disease in the

[1] See again the case of ligature of the aorta, by Sir A. Cooper, in the Surgical Essays.

[2] Dr Craigie has, I think, gone a step beyond his own data, in assuming that the obliteration is always a little below the junction of the ductus arteriosus with the aorta.

arch and left ventricle, are clearly indicative of an impediment. The collateral circulation is the simple result of the ligature, by which the fulness of certain arteries is diminished, and they become consequently weak, and ready to receive blood from any adjacent source. The dilatation of collateral vessels is an increased growth, by reason of very manifest agencies. First, they are subject to an increased force, and are therefore dilated in a measure, as well as others which do not aid the collateral circulations; secondly, supplying comparatively empty vessels, they empty themselves easily, and contract so as to fail of their own due nutrition, and thus they become weakened; and, thirdly, this state or stage of debility acted on by distension, leads to fresh nutrition, and dilatation, and elongation. The course is the same for the growth of the artery of a rapidly forming tumour, or of the gravid uterus. When the distension from behind, and the emptiness in advance, and the size and strength of the intermediate vessels, have become balanced, the changes cease,—the inflammatory, soft, and yielding conditions disappear.

With respect to the closure of the ductus arteriosus, I think it is apparent that the ready flow of blood into the lungs cannot be the direct cause, although it may allow the direct cause to act efficiently; and therefore it is only an indirect cause,—a means of facilitating the closure.

So far as the Doctor's cases are defined, they are all cases of contraction of the aorta, about the spot where the ductus arteriosus joins it, and most especially and completely just below that spot; and it is a curious observation, that this point is pretty exactly that which would suffer most from traction, supposing the ductus arteriosus to be acted on by the left bronchus at the moment of the first inspirations. I do not suppose the effect to be accomplished without some inflammation; and I do conceive that a process of distension and growth may very well serve to remove the constriction when found a line or two farther from the cord of the duct in the progress of time, or rather early in the process of the changes. It is evident that the greatest pressure of the left bronchus would act on and through the under side of the arterial duct; and the changes in the aortic arch at birth are not to be forgotten. To convey all, instead of half the circulating fluids, involves a rapid increase of size and fulness; and this, with each diastole of the tube, is calculated to extend or elongate the closing duct, and even augment its disposition to close. It must appear that I have wished to refer the formation of an annulus in the aorta, above the ductus arteriosus, to a period anterior to birth, and therefore to a different cause from that we have just been considering; and I confess that I have inclined to this view, at least in particular cases; but I must state, that even supposing the annulus (as in the case of Stephen

S., p. 21) to have commenced at birth, it might still be a cause of the persistence or reopening of the duct.

In the cases where the aortic obstruction is mainly below the site of the ductus arteriosus, and we find the duct reduced to a well-formed cord, or firm, narrow tube, which shews that it had attained a good development as a duct, it seems to be assuming too much to conclude, that it may first have concurred to fill the arch and its branches, and then have spontaneously contracted.

To suppose that the contractions of the aorta begin at birth, accords with a probable exciting cause, namely, pressure on the duct.

It remains for me to set down the conclusions which the preceding statements seem to warrant.

An open state of the ductus arteriosus is very rare. The proper consequences appear slight, but the results, in connexion with other impediments, are of a very serious nature. The early death in almost all the cases adduced is to be noted. A blue aspect, save in extreme cases, is not to be expected. Serious affections of the lungs seem almost constant.

The open state of the ductus arteriosus may depend on the obstructed orifice of the pulmonary artery,—on narrowness of the ascending aorta,—on contractions towards the end of the arch, partial or complete,—and perhaps on pulmonary obstruction.

The state of the duct in different cases considered, we are led to infer that some extraneous influence (as the pressure of the left bronchus) is requisite to close it.

ARTICLE II.—*On the Contractions of the Uterus in Labour.* *By* S. SCOTT ALISON, M.D., *Hon. Secy. of the Medical Society of London.*

(*Read before the Medical Society of London, 6th Dec.* 1841.)

The difficulty of explaining the origin of the contractions of the womb during labour, has been long confessed, and is proved by the numerous vague and conjectural explanations which have been offered from time to time, down to the present day. And even now, with all the recent advancement in physiology, and with the modern discoveries in the structure and action of the various organs of the body, it does not appear that a philosophical rationale has yet been proposed, on this interesting and highly important subject. Obstetricians have been long baffled in their attempts to account for the occurrence of the expulsory movements of the uterus, at the fortieth week of utero-

gestation. Dr Burns says, "different attempts have been made to explain why labour commenced at the end of the ninth month of pregnancy. The mysterious power of numbers, the influence of the planets, the distension of the uterine fibres, the pressure of the child on the developed cervix and os uteri, have all in succession been enumerated as affording solution of the question. It can serve no good purpose to enter into the investigation, for the purpose of refuting these opinions, which might be easily done, *especially as I have no satisfactory explanations to offer.*" And Dr Mason Good, when mentioning the occurrence of the expulsory process at the termination of the fortieth week, says, "it (the expulsory process) is so true to this exact time, as clearly to show it to be under the influence of some particular agency, though the nature of such agency has never been satisfactorily pointed out." How numbers could prove a cause of labour, it is not very easy to conceive; and, to most people, the difficulty does not disappear under *this* explanation. Were particular positions of the planets the cause of uterine contractions, all pregnant women inhabiting the same locality should labour at the same moment. Labours should come home in tides, and children be brought forth, as drift stranded at high water from the ocean. That distension of the womb and the pressure of the child are not of themselves sufficient to produce the phenomenon, is proved by the fact, that the term of utero-gestation is the same, or nearly the same, in all women, and bears no relation to the size of the embryo, the largest child being carried as long as the smallest, and *vice versa*.

The contractions of the uterus during labour are connected with a variety of circumstances, which may be grouped under two heads, and referred to two different conditions, viz. *first*, a condition of the uterus, including a faculty of impressibility, and a capability of performing certain corresponding actions in an efficient manner; and, *second*, an embryo within the womb, capable of acting upon, or impressing this organ. These are the same kinds of conditions which hold in reference to the heart. There is present an organ capable of receiving impressions, and there is present an appropriate stimulus, viz. the arterial blood. These conditions are essential to all excito-motory actions. The movements of the iris depend on two conditions,—the presence of light, and the eye being in a state of integrity, capable of receiving impressions, and of performing appropriate movements. The movements of the stomach and bowels depend upon like conditions. In the stomach of the American, St Martin, whose case was published by Dr Beaumont, it was observed that this organ remained quiescent when empty, but that it performed its customary movements when filled with food. The actions of the womb resemble these movements, and are strictly excito-motory.

The condition of the womb itself, enabling it to perform the expulsory process, which constitutes labour, at the fortieth week of utero-gestation, consists of a due and perfect development of contractile fibres, a high degree of impressibility, and a full and efficient supply of motive influence, sufficient to put the contractile fibres into a state of action.

The proper stimulus of the uterus at the fortieth week, is the embryo, composed of fœtus, liquor amnii, and placenta, forming, by its weight, size, movements, and other qualities, a body well calculated to impress an impressible organ.

But the immediate change on which the expulsory effort in labour is dependent, takes place rather in the womb than in the fœtus,—rather in the organ than in the stimulus. The womb has just acquired its complete degree of vitality, through the growth and activity of its nervous system, by which it readily becomes impressed by the embryo, until this time comparatively little perceived, and by which expulsory efforts are induced. This is proved by the fact, that though the embryo, from its first movement in the uterus, is calculated to be a stimulus, no contractions of the uterus occur, during health at least, until the full period of nine months.

But although the embryo, from the first moment of its presence, is calculated to prove a stimulus, and does occasionally prove such in disease, yet it is not until the completion of the fortieth week that it has become, by its size, weight, movements, and other qualities, the full and perfect stimulus of its containing organ. The reason that the embryo has become, at the ninth month, the full and perfect stimulus, is, that the child has at this season attained that degree of growth and perfection, which will enable it to maintain an independent existence; and the same fact accounts for the uterus attaining its full degree of vitality, including the properties of impressibility and contractibility at this period, and at this period only, in health.

The inquirer who would penetrate farther than this point, and who would desire to know why it is at this season that the child has arrived at that degree of perfection, fitting it for independent existence, must be inevitably baffled; and he will find, that the only explanation which he can obtain is, that it is by the fiat of Him who made man at all, who willed that he should arrive at puberty about the fifteenth year, at his full stature about the eighteenth or twentieth, and that he should become a decaying, a decrepit, and dying being at eighty.

Contractile fibres of the Uterus.—It is only at the ninth month of utero-gestation that the contractile fibres of the uterus have attained their full growth and perfection. At this period they are larger, and appear to be more numerous than at any other season; and it is only now that they are capable of contraction

in a completely efficient and natural manner. These fibres are not new formations, but existed, though in a comparatively rudimentary state, even in the unimpregnated uterus. It is by the contraction of the uterus, almost exclusively, that the expulsion of the embryo is effected, as is proved by the descent of the head into the pelvis, and by other changes, before any voluntary efforts have been made.

That faculty of the womb by which it becomes impressed with stimuli, is of two kinds; first, one commonly called sensation, and, second, one of impressibility. Impressions received by common sensation, are conveyed to the brain, where they are made known to the individual. These impressions are not necessarily followed by involuntary movements, and seem to be received and conveyed by distinct fibrils of nervous matter.

The impressions received through the faculty of impressibility, to which some have given the name of organic sensibility, are not made known to the individual, are followed by certain involuntary movements, and seem to be received and conveyed to the nervous centres by distinct fibrils of nervous matter. It has not been yet finally settled to what part or parts of the nervous system these impressions are conveyed, nor has the anatomist yet fixed upon the particular set of nerves subservient to this office.

Common sensation of the womb is subserved evidently by distinct fibrils of nervous matter ramified upon this organ, mixing with the cords called sacral nerves, joining the medulla spinalis, and passing on to the brain, to terminate in that part connected with the consciousness of the individual. The experiments of Sir Charles Bell, the phenomena of disease of the brain and spinal marrow, attest the truth of this statement.

Impressibility seems to be subserved by nervous fibrils, ramified likewise throughout the organ, mixing up with the sacral nerves, joining the medulla spinalis, and there communicating with their corresponding motor fibrils, agitating them, and causing them to produce the appropriate contractions of the organ originally impressed. That these nerves pass into the spinal marrow, is proved by the results of various experiments, and by the phenomena of many diseases and injuries of this part of the nervous system. When the spinal marrow is destroyed, or inactive, in consequence of disease, the faculty of impressibility in the womb is destroyed likewise, and stimuli may be applied without the induction of any movements of that organ.

But many circumstances lead the author to believe, that these nerves of impressibility of the uterus, or some of them, or some others subservient to the same faculty, reach up to the brain also, and even there, stimulate and rouse to action, motor fibrils subservient to the contractions of the uterus, without any immediate action upon the consciousness of the individual. Among the cir-

cumstances favouring this view, may be mentioned the exaltation of the impressibility of the uterus, evinced by contractions preternatural, either in respect to time or force; when the brain's action is exalted, as during strong mental emotions, mania, phrenitis, delirium tremens, hysterical excitement, and the early stage of many febrile diseases; the impairment of the impressibility of the womb, evinced by slow, weak, and inefficient contractions of the uterus, even when containing the appropriate stimulus, the embryo at the full period, when the action of the brain is imperfect, whether this be from mere debility of the brain, from congestion, from serous infiltration, from effusion of blood, depression of the skull, narcotism, exhaustion, mental exertion, or otherwise,—facts of daily occurrence in the practice of the obstetrician.

The faculty of the womb by which its contractile fibres are put in motion, is subserved by nervous fibrils ramified upon this organ. These nerves are distinct in their office from all others supplied to this organ, yet they are not to be recognized by any distinct physical characters. That some, or most of them, join the sacral nerves, and pass into the medulla spinalis, is the common opinion, and is proved by the results of experiments on this part, and by the phenomena of disease and of injuries at this portion of the nervous system. When the medulla spinalis is irritated, and its action thus becomes exalted, abortion, premature labour, and preternaturally violent and unintermitting expulsory efforts, are made; and when, on the other hand, this portion of the nervous system is destroyed, no contractile efforts whatever are made, even when the appropriate stimulus is within the cavity of the organ. But these facts alone, though they prove that the motor fibrils do exist in the spinal cord, do not prove that these, or some of them, do not reach further, and extend on to the brain itself. When the great sciatic nerve is exalted or depressed in its action by some local cause, the sensibility of the parts supplied by its subdivisions becomes exalted or impaired; but it does not therefore follow, that the fibrils composing these subdivisions absolutely terminate in the great sciatic nerve, and do not reach the spinal marrow; the contrary is at once proved by a reference to their condition when the spinal marrow is the seat of disease, for this will then be found to be morbid. The same method of investigation applied to the nerves subservient to the womb, will lead to a somewhat similar result. That these nerves, or some of them, do extend to the brain itself, and draw therefrom motive influence, seems to be established, by the induction of contractions of the womb ere the ninth month of utero-gestation, which so commonly attends all those conditions of the brain marked with much exaltation of its action; and by the impairment, or even the stoppage, of the ex-

pulsory efforts of that organ, when the brain has become preternaturally inactive.

It appears, then, to the writer, that the appropriate stimuli of the motor fibrils of the womb, which are the impulses of the nerves of impressibility, are not exclusively received in the spinal marrow, but may be received in the brain itself. But it is not in these two parts only that the writer believes the impulse of the nerves of impressibility may be received, for he thinks these may be communicated to the motor fibrils in the womb itself. In this opinion, he is countenanced by the movements which take place in muscular organs after separation from the body, upon the application of stimuli. And though he is not certain that the womb has contracted under such circumstances, he doubts not that this organ, as well as the heart and stomach, might exhibit these phenomena. A fact has been adduced by some physiologists, to prove that the spinal marrow or the ganglia retain some nervous power, or even elaborate it after death; and this is the occasional expulsion after death of the contents of the uterus. But this fact is as strong for the brain or for the nerves of the womb, as for the ganglia or the spinal marrow. Why is it not adduced to prove the same of the brain, which we have no right to assume is more dead than they? This fact, as well as the alleged contractions of the separated organ, go to show, that the nervous system may retain, or even elaborate nervous force, after the circulation and the respiration have ceased.

When muscular organs contract, after separation from the body, the phenomenon is referred to contractility of the organ itself, and altogether independent of the nervous system; but it is difficult to conceive how any vital act can take place independently of the nervous influence. The present writer prefers referring the movement to impressions made upon the nerves of impressibility, and communicated to the motor fibrils ere they have left the organs in question.

When movements in muscular organs take place, when severed from all connection with the ganglia and neighbouring nerves, they are usually very imperfect, and of very short duration, doubtless in consequence of the amount of the nervous force remaining in the organ, being small, or in consequence of the quantity of nervous energy which may be elaborated by the ganglia in the organs being inconsiderable, and, perhaps, by its being imperfect in quality. There is reason to suppose, that complete death or inaction of the nervous system, in all its parts, may not take place at one and the same moment, with stoppage of the respiration and circulation, which is vulgarly called death.

When movements take place in the womb, when it is connected with the spinal marrow and the ganglionic system only, the

brain being separated, they are not strong, nor so long continued, as when it is connected with the whole nervous system. Strong contractions of the womb have occurred after the brain has been separated, but this is comparatively rare, and they are never continued for any length of time. In this instance, the contractions are more powerful and complete than the alleged movements in the womb, separated from the body; and this depends, doubtless, upon the larger amount of nervous influence which the ganglia and the spinal marrow can contain, and also, probably, on these parts elaborating nervous influence themselves. These movements are much less powerful than when the womb is connected with the whole nervous system, as happens in natural labour; and this latter circumstance is to be accounted for on the principle, that the brain elaborates originally part, or, perhaps, nearly all the nervous influence subservient to the contraction of the uterus.

Anatomical account of the nerves of the Uterus.—The womb, both in its impregnated and unimpregnated condition, is supplied by nervous filaments, proceeding from the sacral nerves forming the sciatic plexus, and from the ganglionic system, in that part called the hypogastric plexus. In the unimpregnated condition, the nerves are remarked to be about the same size and the same number, as go generally to other organs of a similar size: in short, nothing remarkable is observable. But ere the uterus has been impregnated a few weeks, the nerves are found to be larger and more numerous than previously; with the growth of the uterus these nerves grow, and ganglia increase in size. About the sixth month a wonderful change has taken place, thousands of filaments appearing, and spreading themselves over the uterus and vagina. At the ninth month, the ganglia have attained an enormous size; the filaments are innumerable, spread over the uterus, and resemble fasciæ, for which, indeed, they were long mistaken, until the distinguished Dr Robert Lee pointed out their real nature. To this distinguished obstetrician, the profession is indebted for this important and highly interesting discovery, which throws so much light upon the phenomena of utero-gestation and of labour, and which, moreover, goes so far to support the views of the humble writer of this paper. The writer has had the advantage of examining the beautiful preparations of the nerves of the uterus, prepared by Dr Lee, to whose liberality and kindness the profession is not less indebted, than science is, to his meritorious exertions in this field of labour.

The nerves of the uterus, at the ninth month of utero-gestation, are not much less than the whole ganglionic system of all the other parts of the body. Doubtless, many of these nerves are engaged in the various offices of nutrition, of secretion, and absorption, both in respect to the uterus and to its contents; and

there is every reason to believe, that many of them, viz. the nerves of impressibility and of involuntary motion, are now attaining that perfection, which is to fit them for the performance of the expulsory efforts, so important to the welfare both of the mother and the offspring.

The only season during health, at which the uterus is called into contractile or expulsory efforts, is the ninth month of utero-gestation. At this season the condition of the womb is fitted for the effort, and the embryo is now present, and more than ever calculated to impress the organ, by its size, weight, movements, and other qualities.

But there are other occasions, on which the contractile efforts of the uterus are made, and these occur when certain morbid conditions are present. These unseasonable contractions may take place in the impregnated or in the unimpregnated uterus. They vary much in their character, according to the nature of the conditions on which they depend; and for the most part, they are less and less complete, the more remote the condition of the uterus is from its usual state at the ninth month of utero-gestation.

In the unimpregnated uterus, contractile efforts are occasionally induced by disease of the organ, by the presence of false membranes, moles, and hydatids, within its cavity.

In the impregnated uterus, the morbid conditions leading to preternatural contractile efforts of this organ, are referrible to two different parts, to the stimulus, viz. the embryo, and to the impressed organ, including its nerves of impressibility and of organic motion.

The conditions of the embryo leading to preternatural contractions of the womb, are, preternaturally large size of fœtus, a multiplicity of fœtuses, putrefaction of fœtus, convulsions and great movements of the child, large volume of liquor amnii, the contact of the fœtus upon the uterus, by violence, or by the premature discharge of the liquor amnii.

When the morbid condition, leading to preternatural contractile movements, exists in the womb, it is for the most part referrible either to the nerves of impressibility or to the nerves of motion. The morbid affection of the nerves of impressibility is invariably one of over-activity, and the seat of the affection may comprise their whole course or only a part, as in the uterus, in the medulla spinalis, or, perhaps, in the brain itself. The whole course of the nerves of impressibility is most commonly the seat of the disease, when the patient is the subject of a peculiarly excitable nervous system; and this is usually evinced by general excitability.

The medulla spinalis is a common seat of the affection, and most frequently occurs in patients affected with disease of spine.

The brain is the seat of the affection very commonly, when preternatural contraction attends the early stage of fever, mania, delirium tremens, concussion, and the like.

The ramifications of the nerves in the uterus, is most frequently the seat of the morbid affection, when the woman is affected with diseases characterised by increased vascular action and irritation, and when foreign bodies or irritating agents are applied to the uterus itself, as the finger, or instruments, occasionally employed by the accoucheur or others, to induce premature labour.

When the morbid condition resides in the motor nerves of the uterus, the seat of it may comprise their whole extent, or a part only, as was mentioned in connexion with the nerves of impressibility.

It most commonly happens, that these two sets of nerves are affected at the same time. The nerves of impressibility convey strong impulses, and the motor nerves respond to these impressions with preternatural force.

Insufficient action of the contractile fibres of the uterus is frequently remarked in labour, or at the proper season of labour; and the conditions on which this depends, may be referred either to the stimulus or to the womb, including the nervous system subservient to it.

The conditions of the embryo leading to inert action are—the death of the fœtus some time before the full period—large amount of liquor amnii, over-distending the uterus—the sudden and premature withdrawal of the waters at an early stage of labour—the impinging of the angular parts of the infant on particular spots of the uterus, causing partial action only,—the sudden withdrawing of the body of the child by manual force, after the head has been born, in the absence of contractile efforts,—the extraction of the placenta during inaction of the uterus, and without adopting steps to promote its contraction. These causes lend some countenance to the supposition, that the embryo is the stimulus of the womb's action; as the stimulus is removed, so we find the organ less disposed to contract. Some examples of delayed delivery are recorded; but when the period of delay has been considerable, not amounting even to a few weeks, much doubt has hung over the accuracy of the facts. The possibility of labour being delayed as well as hastened, forms a very important consideration; and if the view of the present writer, that the embryo brings on delivery, by being a stimulus to an impressible organ, be correct, it does not appear difficult to suppose that certain conditions may arise, both in the embryo and in the womb, which may delay the expulsive process.

The conditions of the womb itself which lead to inefficient action, are rigidity of the os uteri, imperfect development, scirrhous

and fibrous tumours, preventing the usual action of the motive power supplied by the nerves.

The nerves subservient to the uterus are frequently the seat of conditions unfavourable to the action of the organ. The most common condition is inaction. This is the opposite condition to that which induces preternatural activity of the uterus. It depends on many different circumstances; on the exhibition of narcotics, on congestion, on effusion of blood, infiltration of serum; the presence of purulent matter within the head; general debility; derivation to some other organs; ramollissement of the medullary structures; the inaction of hysterical women, such as is observed in trance, syncope, uterine hemorrhage, and mental emotions, such as sorrow, and apprehension; and protracted labour. The morbid condition usually extends both to the nerves of impressibility and of motion, and may be noted throughout their whole extent, or may be confined to one or more parts, as in the case of preternatural action, already referred to. But the most common seats of this condition of the nervous structures, subservient to the contractions of the uterus, are the brain and medulla spinalis.

ARTICLE III.—*Remarks on the Diagnosis of some Valvular Diseases of the Heart. By* ANDREW ANDERSON, M.D., *Professor of the Institutes of Medicine in Anderson's University, Glasgow.*

The following case appears to me to assist in explaining the cause of the first sound of the heart.

Margt. Gordon, aged 29, has for some years had occasional palpitations, which have latterly increased in frequency. There is much oppression, cough, and frequent paroxysms of orthopucea; œdema of legs.

Percussion over heart natural; impulse weak. The sounds have quite changed character with one another, the first being short, quick, and abrupt, and followed by a pause; the second loud, and accompanied by a prolonged, coarse, rasping sound, audible only to the left side, and ending without interval in the next first sound. But for the coincidence with the impulse and arterial pulse, the latter would have been mistaken for the second, the other for the first sound.

Inspection, ten days after report.—Heart of natural size, right cavities healthy. Left auricle a good deal dilated, left ventricle natural bulk, small in capacity; in short, in the state which has been called concentric hypertrophy. Muscular substance firm; aorta and its valves natural. Mitral valve contracted, the centre of the membrane thin, though opaque; but its roots and edges, as well as the chordæ tendineæ, were stiff, cartilaginous, and

thickened. The aperture towards the ventricle was very small, yet easily closeable by the cartilaginous valve; towards the auricle it was merely a slit an inch long and a quarter of an inch broad, rough and uneven, as well as stiffened, and exhibiting one small excrescence.

The second sound of the heart is on all hands allowed to coincide with the beginning of the ventricular diastole, and to be caused by the flapping of the arterial valves. The first is known to coincide with the ventricular systole, but not to depend on the blood, since it is found to be produced by the empty heart. It is probable that the *bruit musculaire* enters into its composition; but opinions are at variance as to whether the closure of the auriculo-ventricular valves is also concerned; I think the preceding observation renders it likely that it is.

If the first sound be supposed to depend chiefly or entirely on the closure of these valves, it is plain that in such a case as the present, where the valve is contracted, and the space through which it must move, in order to close, is small, that sound will be shortened, and the rest of the systole will take place in silence, there being no obstruction in the aortic orifice. In the natural state, these valves require some time to be floated up, under the guidance of the chordæ tendineæ. Here they had but one-eighth of an inch to pass through ere they met. Thus their action was reduced to a suddenness and shortness corresponding to that of the arterial valves, and the resulting sound simulated the natural snap of the second sound.

The abnormal pause after the shortened first sound occupied the time during which the blood was noiselessly flowing into the aorta, and the ventricle finishing its contraction. This period is usually occupied by the prolonged first sound. On the ventricular diastole, the second sound occurred, for the aortic valves were healthy; but instead of the ventricle being rapidly and silently filled by the blood from the auricle passing through a free mitral opening, the obstruction presented by the extremely contracted state of that aperture occasioned this process to occupy a much longer time—to extend, in fact, over the period naturally devoted to the repose of the organ; while both during that time and during the immediately succeeding auricular systole, the blood flowed over a roughened passage, causing a loud rasping sound to be heard over the region of the affected valve.

The only lesion in this case, besides that of the mitral valve, was the concentric hypertrophy of the heart; and this might be supposed to have been the cause of the brevity of the first sound. But, setting aside the uncertainty which exists as to the real nature of this lesion, some pathologists attributing it to post-mortem change, the point is decided by the case of

M. Stewart, aged 26, admitted into the Glasgow Royal Infir-

mary, under the care of Dr Anderson, in 1838. The impulse of the heart natural; the sounds weak and normal over the sternum and to the right side of that bone, but to the left presenting exactly the same characters as those described in the last case, except that there was less of a rasping character in the morbid sound. On inspection, the aortic valve was healthy, as well as the valves of the right heart; the mitral valve was contracted as described in the last case, but scarcely roughened. *The left ventricle was rather large.*

Reasoning from the above cases, it might be possible to arrange the sounds of the heart in valvular disease in a natural order, so as perhaps to facilitate the diagnosis of the different varieties of valvular disease, *depending on contraction;* for it has been shown, that when the mitral valve is widely and permanently patent, the sounds may be natural. (*Lancet*, Sept. 1841.) It ought also to be observed, that a simple bellows murmur, without a rasping or purring sound, is insufficient to prove the existence of valvular disease.

In the following observations I shall, for the sake of simplicity, speak of the valves of the left side only; it being of course understood that they apply to the more rarely occurring diseases of the right heart also.

The valvular diseases may be arranged as follows:—

1. Mitral valve contracted, but capable of closing.
2. ..... incapable of closing.
3. Aortic valves contracted, capable of closing.
4. .... incapable of closing.
5. Combination of 2d and 4th cases.
6. ..... 1st and 3d.
7. ..... 1st and 4th.
8. ..... 2d and 3d.

In all these, the *rhythm* of the systole and diastole of the carotics remains as in the healthy state; the flow of blood, and the sounds, being shortened or prolonged in consequence of the valvular disease.

The following table shows the mode in which these sounds are produced, and the modifications they undergo in each case.

	1	2	3	4	5	6	7	8
	Ventricular systole.				Ventricular diastole.		Rest.	Auricular systole.
Healthy state.	First sound.				Second sound.	Silence.		
1	First sound.	Silence.			Second sound.	Murmur.		
2	Murmur of regurgitation.				Second sound.	Murmur.		
3	First sound, masked by murmur.				Second sound.	Silence.		
4	First sound, masked by murmur.				Murmur of regurgitation.		Silence.	
5	Double murmur.						Single murmur.	
6	First sound, masked by murmur.		Murmur.		Second sound.	Murmur.		
7	First sound, masked by murmur.		Murmur.		Double murmur.		Single murmur.	
8	Double murmur.				Second sound.	Single murmur.		

If the time of one series of the heart's actions be divided into eight parts, the ventricular systole will occupy four, during which, in the healthy state, the first sound will be audible; the ventricular diastole two, the second sound occurring at its commencement. During the systole the blood flows into the aorta, and the mitral valve closes. During the diastole, the aortic valves having shut, the blood flows into the ventricle from the auricle. The action then ceases for one-eighth of the whole time, and the remaining one-eighth is occupied by the silent contraction of the auricles, the blood quietly flowing into the ventricles, and thus stimulating them to contract again. It is stated by the Committee of the British Association, that the systole of the auricles is accompanied by a sound; but if present, this is so slight, that in practice it may be disregarded. In the natural state then, we have a silence of one-fourth intervening *between the second and first sounds*, or before the latter.

STATES OF DISEASE.

1*st Case.* The mitral valve shuts so rapidly, that the first sound is abbreviated, and the rest of the systole goes on in silence. Thus, the silence occurs *between the first and second sounds*, or after the former, as more fully described above, and as exemplified in the cases already related.

2*d Case.* The mitral valve never closes, nor is it ever fully open. There is no first sound, but a continuous murmur of regurgitation from the ventricle into the auricle during the ventricular systole. The second half period presents the same phenomena as in the last case. Example—in the papers in *The Lancet*, already quoted, there is a case of "double-dash murmur" recorded, accompanying both sounds of the heart, and found to depend on permanent patency, *i. e.* inability to close, in both auriculo-ventricular valves.

3*d Case.* The first sound is masked by a murmur caused by the blood passing into the aorta through the roughened and contracted orifice; but as the aortic valves close perfectly, and the heart is otherwise normal, the sounds, during the second half period, are as in the healthy state.

4*th Case.* The first half period as in the last case; but as the aortic valves will not close, there can be no second sound, its place being supplied by a murmur of regurgitation, caused by the blood passing back into the ventricle from the aorta through the patent valves. This lasts, however, only while the ventricle is dilating, since the blood flows into that cavity during the auricular systole over a healthy mitral valve. Hence there is silence during the last quarter period.

It is needless to give an example of the third case, as it is one of the most common varieties of valvular disease of the heart, and frequently met with. The following is an instance of case 4.

William Graham, aged 70. Anasarca and much dyspnœa; cardiac uneasiness; percussion dull over heart; impulse moderate; no abnormal sound heard except in cardiac region, where there is a slight bellows murmur and rasping with the first sound, and an obscure *souffle* accompanying the second, which has lost its natural sharp and abrupt character. Sinking.

Inspection.—Heart much enlarged, but no valvular disease except at orifice of aorta, the valves there being covered with venucosities, and one of them completely contracted, so that, although the others were considerably enlarged, as if to supply its place, the aperture could not be closed, the aorta being slightly dilated.

The remaining cases are combinations of the others, and their sounds may be calculated from the comparison of the sounds proper to the individual lesions of which they are compounded.

I possess no observation of any but the 5th case. Elizabeth Taylor, aged 37. Has had heart affection, following on rheumatism, for many years; general dropsy and much dyspnœa; dulness to percussion, and strong purring tremor on the application of hand over heart. The sounds are loud and natural above, but towards the left side are inaudible, a strong *bruit de scie* having replaced them, and, in the words of my report taken at the time, "apparently not referable to either of the sounds in particular, but seeming to belong to both." Died suddenly two days after report.

On inspection, pericardium was found to contain a good deal of fluid; the auricles were much dilated, the ventricles of natural size; aortic valves projecting into the vessel, quite stiff, thickened, opaque, and cup-shaped; mitral valve completely cartilaginous, forming an immoveable ring, in the centre of which remained an elongated chink, incapable of altering its form.

This is a very good example of the only case in which both the sounds are really absent. Here, during the ventricular systole, there is the murmur of regurgitation from the blood flowing back into the auricle through the patent mitral valve, and a direct murmur caused by the blood passing into the aorta over the roughened arterial orifice. This double sound is continued through the third quarter period, only with this difference, that the murmur of regurgitation is now caused by the blood flowing back from the aorta, and the direct murmur by the flow from the auricle. And in a similar manner, as may be seen from the table, the sounds in the other varieties of valvular disease may be explained. Of these, however, I possess no examples.

On the principles already laid down, we may perhaps venture to form the following classification of the diseases we have been considering.

A. Systole (ventricular) without a murmur.

a. First sound natural. (The healthy state.)

b. First sound shortened, and followed by a pause.

Case 1. Here the second sound is long, and accompanied by a murmur.

B. Systole with a murmur.

a. *Diastole without a murmur.* (Case 3.) Here the second sound is natural.

b. *Diastole with a murmur:*—a continuous murmur during the whole action of heart.

a. Second sound present, being immediately followed by a murmur.

1. First sound absent.

α. Murmur with the systole single (Case 2.)

β. Murmur with the systole double (Case 8.)

2. First sound present, though short (Case 6.)

b. Second sound absent.

1. First sound absent. (Case 5.)

2. First sound present.

α. First sound continuing during the whole systole (Case 7.)

β. First sound short, being followed by a period of silence. (Case 4.)

It may be concluded, that if either the systole or diastole of the ventricle be unaccompanied by a murmur, the disease present must be either case 1 or 3; in both which the valve is contracted, but capable of closing; and these cases can always be easily distinguished from one another, and from other varieties.

In all other cases there is a murmur accompanying both sounds; and here we have six varieties, distinguishable from each other with greater difficulty, in consequence of the distinction resting on the presence or absence of the sounds, which, even when present, are marked by the accompanying murmur, and therefore apt to be overlooked. As negative is always weaker than positive evidence, the 6th case is the only one of which we may be enabled to form a certain diagnosis, from distinctly ascertaining the presence of the sounds; and it may be observed that the lesion in this case is compounded of those in cases 1 and 3, which are both easily detected. The lesion in the remaining cases can only be suspected; but the second sound will, from its character, be always less easily marked than the first.

The diagnosis between cases 2 and 8 rests on the abnormal murmur being, during the systole, heard in the situation of both valves in one case, and over one only in the other; and this distinction may, in practice, be sometimes made. Hope states, and the cases I have related prove it, that the sounds depending on disease of the mitral valve, are heard quite to the left inferior region of the chest; and the case of Mr Stewart proves that we may have the sounds of the right heart perfectly normal over the sternum, and farther to the right, while those of the left heart are quite altered in character. In this case, the systole and diastole were coincident in both sides of the heart, though the sounds were different, except that the diastole, not completed in the usual short period, was prolonged into the 7th eighth of the action.

In the dead subject, the position of the heart is such, that the mitral valve is situated quite behind; [and it might be supposed that a sound produced in that orifice would be obscurely heard. Experience contradicts this inference; and the explanation is to be found in an observation of Cruveilhier's on the heart of a monstrous fœtus, lately published in the British Journals; and the same fact results from the observations of Kaertschner (*Müller's Archives*, 1841,) that at the moment of contraction the heart is twisted on its axis, so as to bring the left cavities for-

wards. In the same paper Cruveilhier states, that there is no interval of rest in the heart's action, and that the auricular contraction does not antecede, nor cause, the ventricular systole; observations directly at variance with the most carefully performed experiments of other physiologists, and the less likely to be correct, that they were made on such a young and probably rapidly acting heart. He also delivers it as his opinion, that the first sound depends on the opening of the sigmoid valves; a conclusion which we must refuse to affirm, after perusing the cases of Mr Gordon and Mr Stewart already related; for in them the first sound was altered, while the only lesion was seated in the mitral valve. In obstruction of the aortic valve, a morbid sound accompanies the systole, as we have seen, and is heard upwards along the course of the aorta.

Should the above remarks be found to be based on correct reasoning, they may perhaps be found to facilitate the diagnosis of valvular disease.

ARTICLE IV.—*Observations upon Animal Heat.* *By* FRANCIS THOMAS RICHARDSON, M.D. Edin.

We do not intend, in the following observations, to give a history of the production of animal heat, but shall merely offer a few remarks upon the cause of the generation of one-fourth of it, which, as yet, has never been satisfactorily explained; previously to doing which, a slight sketch of the subject will be necessary, for the proper elucidation of the sequel. Physiologists have come to the conclusion, that the theory of La Grange and Hassenfratz of the causes which generate heat in animals, is the correct one. The changes which occur at the lungs are, the inspiration of oxygen and nitrogen, and the expiration of carbonic acid, nitrogen, and halitus, with the conversion of venous into arterial blood. This carbonic acid is formed in the capillaries by the union of the oxygen in the arterial blood with the carbon of the old tissues of the body, and what is conveyed with the chyle. The arterial blood is converted into venous; and by the same process the animal heat is generated; for wheresoever oxygen and carbon unite, heat is formed, as in the instance of common combustion. This theory is now so universally received, that it is unnecessary to condescend upon the proofs of it; but it may be mentioned, that it was established upon its present firm basis by the experiments of Spallanzani and Edwards upon the frog,—those of Jurine, Cruikshanks, and Abernethy, showing that carbonic acid is excreted from the hand or foot confined in atmospheric air,—and those of Magnus, shewing that the same

acid is given forth from the skin of the frog, when its lungs have been removed,—and they have all been confirmed by subsequent experimentalists. The source whence the carbon is primarily derived is the chyle; for the carbonic acid is increased in quantity during digestion, and warm-blooded animals consume more food than those which are cold-blooded. Ducks are almost continually eating, whilst to an alligator, one good meal in three or four months is quite sufficient; and frost-bite is not so liable to occur when a proper supply of food is afforded. A slight evolution of caloric likewise takes place at the lungs, from the carbonic acid being there evolved; but the oxygen being absorbed, it is only the difference between these, which is so slight, that it merely keeps the lungs of the same temperature as the rest of the body, for they are cooled by the contact of the air.

Dulong and Despretz ascertained, by their calorimeter, that the quantity of carbonic acid thrown off in a given time from an animal, is sufficient to account for nearly three-fourths—from 74 to 75 per cent.—of the caloric which the animal evolves, but not for the whole of that caloric. It is generally mentioned in books, that the functions of nutrition, secretion, &c., account for the production of the remainder; for in them a fluid passes into a solid state, and, consequently, heat must be evolved. This might account for it, were it not neutralized during absorption, where the reverse occurs, namely, the conversion of a solid into a fluid, and the absorption of caloric. It appears, then, that we must look for some other cause to account for the production of the remaining quantity of animal heat; and we conceive the following to be that cause; namely, the animal heat is *all formed* in the capillaries by the union of oxygen and carbon; but three-fourths only of the carbonic acid is conveyed in the blood to the lungs, and eliminated by these organs; and the remaining fourth is conveyed in the blood of the venæ portæ to the liver, and evolved by that organ under the form of bile, but without producing heat there, the whole caloric being formed in the capillaries. From the observations of Edwards and Dulong, more oxygen is inspired than carbonic acid expired; consequently there must be gradually an accumulation of oxygen in the body, unless it combines with the carbon in the capillaries, and is excreted by some other organ; and the following show that this organ must be the liver. The pulmonary and biliary organs antagonize, or are vicarious of each other. The size of the liver and the quantity of the bile are not proportional to the quantity of the food consumed, but inversely to the size and perfection of the lungs. The liver is very large in reptiles,—larger in fishes and mollusca,—because in these animals a small quantity of carbonic acid is exhaled by the gills. The quantity of venous blood sent through the liver increases as the pulmonary system becomes less perfect. In mammalia and birds,

the venæ portæ is formed by the veins of the stomach, intestines, spleen, and pancreas; in the tortoise, "et hoc genus omne," it receives also the veins of the hind legs, tail, pelvis, and vena azygos; in serpents, the right renal and all the intercostals; and in fishes, the renal and genital veins. Thus, in those animals where the respiratory organs are small, a large quantity of their venous blood, blended with carbonic acid, passes through the liver, where the carbonic acid is decomposed, the carbon and part of the oxygen is excreted with other substances in the bile, and the rest of the oxygen passes on, and explains the presence of that gas in venous blood, which was found by the experiments of Magnus; and when it has arrived at the capillaries, along with the oxygen of the inspired air, it combines with the carbon, evolving heat, and pursues a similar course. In confirmation of this, during the hybernation of certain of the mammalia, when respiration is suspended, and no food taken, bile is secreted. And in the fœtus, the liver is proportionally much larger than in adults, and an abundance of bile produced. In pneumonia and phthisis pulmonalis, the secretion of the bile is increased—in diseases of the heart, the liver is enlarged—and in morbus cæruleus that organ retains its fœtal disproportion; for in these diseases the free direction of the blood at the lungs is impeded; and as the carbonic acid must be discharged from the system, the other emunctory becomes proportionally increased in activity. By a residence in hot climates, the temperament of the body is raised three or four degrees, yet the respiration is diminished; so that the increased quantity of carbonic acid consequent upon the increased heat, can only be carried off by the liver; and we find that an increased flow of bile takes place, and enlargement of that organ is one of the most common diseases which a residence within the tropics produces. And upon the same principle, poulterers surround turkeys with a large fire, which, by diminishing the action of the lungs, increases that of the liver, which consequently enlarges. This appears to be the only manner in which it is possible to explain satisfactorily the production of the remaining fourth of the animal heat; and in proposing it, we have not been carried away by any desire of originality, but solely with the view of elucidating the phenomena in the manner most consonant with observed facts. And the arguments in its favour have been merely mentioned, though each one of them is susceptible of great amplification, but this could not be done in a Journal devoted almost exclusively to subjects of a practical nature.

MELROSE, *December* 1841.

ARTICLE V.—*Remarks on Hypochondriasis. By* H. P. ROBARTS, ESQ.

(Read before the Med. Soc. of London.)

It is only within the last few years that this subject could be approached before a learned society; and it is an indication of the progress of science, that, after having been so long the object of ridicule, it is now regarded by our profession with the attention it deserves. If it is our duty to alleviate "the ills that flesh is heir to," into what channel can we so properly direct our inquiries? What torture is equal to that inflicted by this complaint? Here we have a combination of bodily and mental anguish, not to be met with elsewhere. The stings of conscience, or the reverses of fortune, or the torments of common corporeal maladies, may be borne with composure by persons of strong nerves; but the depression of the hypochondriac is irresistible—he sinks beneath a load that overwhelms every sensation, but that of undefined misery. To use the forcible language of one of my own patients, "The criminal in Newgate, with the horrors of execution hanging over him, is less wretched than the victims of this complaint."

I shall, in the first place, consider the seat and the nature of this disease, and then direct your attention to its causes and treatment.

On the Seat of Hypochondriasis.—While the different passions and emotions of the mind were located among the various viscera of the body—while envy and jealousy were said to be formed in the spleen—while anger was thought to be engendered in the liver, and courage in the heart, it was not unnatural for philosophers to refer hypochondriasis to the liver; and accordingly we find the Greeks assigning this disease a place under the cartilages of the ribs, whence the derivation of the name, ὑπὸ, under, and χονδρος, cartilage.

An unhealthy condition of the stomach and liver, or a fault in the secretion of bile, was thought to be its proximate cause. Hippocrates, Areteus, Galen, and others, originated this notion, which, slightly modified, has come down to the present time, and may be discerned in the writings of the latest authors, under the more fashionable phrase of indigestion. It seems to me, physicians have allowed philosophers to outstrip them in this respect; for they long ago admitted, that all sensation is referable to the nervous centres, and since reflection is but a kind of sensation, that it likewise proceeds from the same organs, and thus that the various passions, (being merely different modes of reflection), are created in these same nervous centres. Though Willis, and more recently Georget, with some few

other honourable exceptions, have shown the intimate dependence of hypochondriasis on disease of the brain, yet a reverence for antiquated authorities has held the generality of our practitioners in its trammels, and placed them in this respect several centuries behind the metaphysicians.

This disease is constantly occurring, without any visible disturbance of the digestive functions. It would be extremely illogical, in such instances, to assume that derangement of the stomach was the source of the complaint, because in the generality of cases such derangement is present. The occasional exceptions show the coincidence to be fortuitous, and that the one is not the necessary consequence of the other. The absurdity of such reasoning is more apparent, when the converse of the proposition is examined: who, in a case of obvious disease of the stomach, where the head was free from all signs of disorder, would, notwithstanding, affirm that the head must be in fault, because these parts were generally simultaneously affected?

In hypochondriasis, the sensibility of the nervous system is heightened, trivial ailments are dwelt on, which would scarcely be noted under other circumstances; add to this, every disease of the encephalon has a tendency to derange the functions of the stomach, and it will no longer appear wonderful, that flatulence, acidity, and constipation, should often form prominent symptoms. But, as I have just remarked, there is no indication of any such disorders to be traced in many instances, nay, sometimes the powers of digestion seem on the contrary to be increased; thus, many hypochondriacs can partake of every variety of food, and eat largely without being troubled with indigestion, or any other inconvenience, so long as they confine themselves to articles that do not act upon the brain, such as stimulating foods, wine, and spirits.

But there never was a case unattended by some morbid sensation; and without the characteristic depression of spirits, these are always present; and therefore it is more rational to consider them the essence of the disease, than to imagine them to be merely sympathetic and dependent on an undefined disorder of the digestive organs, the very indications of whose presence are sometimes altogether wanting.

I am ready to admit, that indigestion is often a prominent symptom, and forms a great portion of the patient's complainings; but it is seldom that it is not more or less easily removed, while the disease goes on, frequently without the slightest alleviation. This is quite opposed to what ordinarily takes place between parts primarily and secondarily affected; and supposing the indigestion to be the original, and the hypochondriasis the sympathetic disease, in general the sympathetic would cease, when the original was cured.

The tendency and progress of diseases are often significant of

their seat; and here again, the evidences of the cerebral nature of hypochondriasis are apparent. Although it occasionally continues for years, without inducing any serious lesion, and generally terminates in restoration to health, instances are by no means wanting of its gradually assuming the forms of melancholia, of mania, and epilepsy, all recognised diseases of the brain; whereas, in real hypochondriasis, the stomach scarcely ever becomes tangibly diseased, its disorders never proceeding beyond functional derangement.

I arrive, then, at the conclusion, that the cephalic signs are pathognomic, while the gastric are merely accidental and sympathetic: In the 1st place, Because the evidences of disease in the stomach are occasionally entirely wanting. In the 2d, Because, when present, they may be cured without producing any alleviation of the cephalic signs. In the 3d, Because they often end in those maladies which are recognised as purely cerebral, while they never degenerate, as far as my experience goes, into organic diseases of the stomach.

On the Nature of Hypochondriasis.—Having located this disease, the next question that arises is, what is its nature? This, I fear, does not admit of so close and satisfactory a solution, yet I hope, by not attempting too much, to be able to make such an approach to an explanation, as will enable us to proceed to the treatment with rational views, instead of trusting to remedies altogether empirical. I shall begin, by endeavouring to disentangle the subject, by showing what the disease is not, and then, by analogies with certain well-known phenomena of the nervous system, to explain that species of action, or rather defect of action, which, in my opinion, constitutes its essence. Such a train of reasoning, though it does not go so far as the pathologist may desire, is the nearest approximation to truth that the present state of science warrants, and ought to be preferred to more subtle theories unsupported by recognised vital laws.

In the first place, then, I must repudiate all those notions which trace the disease to alterations of the vascular system. The symptoms as little bear out such an assumption as they do the gastric hypothesis, anciently propounded;—perhaps less can be said in its favour. That it is not inflammation, partial or general, of any portion of the encephalon or spinal cord will be readily granted. Inflammation has a definite course, which, though pursued more slowly in some cases than others, is yet followed with constancy. Inflammation either resolves, after a short time, or suppuration succeeds, whereas, hypochondriasis may last for years, and at last terminate in health, which could scarcely happen if the brain had suppurated. Many persons contend that it consists of congestion, but this term is of course inapplicable, if it is meant to signify an evanescent turgescence,

since this disease is always protracted through a long period. Sometimes, however, it is employed to express a turgescent state of veins, arising from weakness of their coats—a sort of varicose condition of the vessels; but post-mortem examinations do not countenance this idea; and, as patients usually recover after a longer or shorter interval, I am inclined to ascribe it to some more curable condition. Besides, the symptoms are neither those of inflammation nor congestion. The former is attended with fever, and the latter is characterised by torpor and drowsiness: in a large proportion of these cases there is neither the one nor the other. But if the vascular system is not in fault, what part is? there remains only the cranial matter itself! I believe those persons have approached nearer the truth, who have called it irritation of the brain; but that word is so vague, that it would be variously construed by different individuals, unless properly defined; and I am disposed to think, that what is ordinarily understood by irritation is not the essence of this complaint.

When a muscle is exposed with its nerve, in the body of an animal just killed, and the nerve pinched or pricked with a sharp instrument, contractions of the muscle are observed. This may be repeated as often as the experimenter pleases, and the contractions will regularly follow; but when it is done at short intervals, they become weaker and weaker, until at length they cease; and when it is repeated with rapidity, no contractions can be excited after the first few trials; whereas, if a proper space of time is allowed to elapse, they recur with their original force for many hours, until, in fact, it may be presumed, that physical laws are superseding the vital actions.

Here the consequences of a too forcible and rapid excitement of a nerve, are seen to be the speedy diminution and total loss of its power. I cannot compare the brain of a hypochondriac to such a nerve, because it is not cut off from the sources of vitality; but I may argue, that when too much excited, it will display the same feeble action the nerve did, though a similar cessation of excitability can scarcely be expected in a brain, where vitality is continually supplying the pabulum for that excitability. We may go a step farther, and imagine, that it may not only become feeble in its actions, as the nerve did, but, at the same time, acquire a higher degree of susceptibility to the influence of stimuli —not gain an increased power of action, but merely an increased disposition to act.

Looking at the symptoms of the hypochondriac, do we not find them referable to such a condition of the brain and spinal cord? do we not find diminished powers, with increased disposition to act. The mind constantly at work, yet seldom retaining the idea, —each new impression exciting some half-formed thought, so

feebly conceived as to be abandoned in embryo, to give place to some new abortion, equally transient and imperfect; thus the intellectual powers, though constantly in motion, are never fully exerted, and the mind approaches the wavering and childish. So also of bodily impressions; they are acutely felt, however trivial they may be, and if the attention be directed to some other object, they are as readily neglected. The cause of the pain is often so trifling, that we cannot discover what it is that makes the nerve vibrate. We are apt to exclaim, Oh, it is imaginary! yet the sensation is acute, and loudly complained of, shewing an exalted degree of sensibility, or, as I have termed it, an increased disposition to act, while the action itself is so slight, that the least diversion of the attention into some other channel is sufficient to destroy its persistence. Hence the pains of the hypochondriac are as varied, as they are loudly complained of. If we turn to the nerves of voluntary motion, we shall find the same weakness, though the increased disposition to act is not in general so manifest; yet it is so, sufficiently often to bear out the assertion, that an increased disposition to act is present throughout the nervous system: here it is evidenced by startings during sleep, cramps, sometimes even by positive convulsion, as in those cases that end in epilepsy. When we come to examine the causes of this disease, we shall be able to draw a further argument in favour of this theory; they will be all found to be excitants, too rapidly and violently applied to the nervous system, and they exert the same influence upon the brain, that the pincers and the needle did upon the nerve.

Without, then, laying too much stress on a crude idea, I would suggest, that hypochondriasis is essentially an exhausted condition of the nervous system, with a disposition to continued and still further exhaustion, in consequence of the heightened state of its sensibility rendering it susceptible to the slightest stimuli,—that it is more ready to act, and more feeble in its action; —in short, hypochondriasis is compounded of exhaustion and preternatural sensibility of the nervous system.

On the Causes of Hypochondriasis.—If we were asked to sum up in one word the causes of hypochondriasis, we might, perhaps, do so with less difficulty than in many other diseases. Might we not answer in one word, Civilization? Whether we turn to the predisposing or the exciting causes, both acknowledge their descent from this parentage. Hypochondriasis is the heir of civilization,—a monstrosity so hideous, that it may be doubted, whether it does not counterbalance all the fair progeny that have issued from that source to bless mankind.

If we compare our present condition with the position of the untutored savage, the first and most obvious difference that strikes us is, the extreme caution we take to preserve ourselves

from wet and cold, and to keep the surface of the body at a warmth agreeable to our feelings. With this intent, we not only construct habitations, that do not admit the untempered air, and prevent the direct radiation of heat from the surface, by covering it closely with several layers of non-conducting substances, but, to effect our purpose more completely, raise the temperature of our apartments by the aid of fires. Hence the body speedily loses a considerable degree of the power of maintaining itself at a uniform heat, at all seasons of the year, which belonged to it in a less sophisticated state; it is no longer able to adapt itself to the variations of the weather, and whenever any sudden transition occurs, that has not been provided for by an appropriate change of dress, &c., disease follows. This happens in a variety of ways, but it is needless to pursue this subject through all its ramifications, as it is foreign to our present purpose.

In consulting our inclinations, we keep up around us a degree of warmth far above that which the climate naturally supplies: now the effects of a high temperature are nearly the same on all organized matter, whether vegetable or animal. The vital powers are stimulated to a preternatural exertion: plants grow with rapidity, but maturate and die with equal speed; so with animals and man. In the warmer regions of the earth, we grow to manhood at an early age, and at an early age we decay;—"thus from hour to hour we ripe and ripe, and then from hour to hour we rot and rot,"—it being a law of nature, that the rapidity of the second part of the process, should be in proportion to that of the first. The stimulating qualities of heat manifest themselves more especially on the nervous system. As cold induces torpidity, heat promotes vivacity; it causes an excitability of the nervous system, that sharpens our sensibilities, and heightens our intellectual faculties; this, however, can scarcely be done without creating a morbid sensibility, which the slightest circumstance will bring into play. The nerves become unnaturally sensitive, and ultimately weakened in their action; for, though the nervous system is endowed with superior acuteness, and the intellectual powers heightened, it is only temporarily,—the animal gains no permanent power; and it is curious to observe that this superiority of the nervous system is not accompanied by any increase in the muscular, which, under such circumstances, is usually deteriorated, and incapable of supporting any sustained exertion.

We have, in such a condition, the predisposing cause of that exhaustion and preternatural sensibility, which I have endeavoured to prove to be the essence of hypochondriasis.

But if a predisposition to this complaint is engendered by the artificial means civilisation has taught us to adopt to protect ourselves from feeling

" ———— The penalty of Adam,
The seasons' difference; as the icy fang
And churlish chiding of the winter's wind."

If a predisposition is thus begot, the same agent—civilisation—is abundantly prolific of exciting causes. Man in a state of nature passes through life with a calm indifference, highly conducive to his physical welfare, though not affording scope for mental culture. His wants are few. Being merely the cravings of his animal appetites, they are a source of gratification; there is little or no difficulty in finding the objects that are to appease them: if he thirsts, the brook is at hand; and if he is hungry, the chase can always supply him with food. The long endurance of sorrow can scarcely befall him; for if, from any chance, these necessaries fail, he dies at once. He is not of that class " qui corporum sanorum robora inquietâ cogitatione, nocturnâque vigiliâ, minuerant." The turmoil of business, and the strife of ambition are unknown to him; there is no room for rivalry or pride, and the stirring passions of polished society affect him not. He is not anxious for power, he cares not to accumulate. The book of knowledge is sealed to him, he pines not to penetrate the arcana of science. Civilisation, while it holds out protection to property, begets, at the same time, the *amor habendi*, and with it, the host of cares that are instilled into us in infancy, that are fostered with our growth, and at length become the main duties of our lives. Who among us, that has been hourly occupied in tracing the more violent, and therefore the more obvious, effects of strong emotions of the mind upon our physical constitution, can doubt that the small under-currents, the daily recurrence of petty vexations and annoyances, must have their influence, though in a more silent form; first we observe the animal appetites become blunted,—" life loses its savour and its salt; man eats without refreshment, and sleeps without repose;" then follows a corresponding depression of the vital powers, which, reacting on the brain, produces a still deeper shade of depression. The very virtues of society become the sources of hypochondriasis; and the learned and the amiable are too often its victims!

There is another way in which civilization has engendered this disease, and perhaps it is the more melancholy and humiliating to contemplate, since here reason seems to have played the traitor, and the guide, which ought to have led us to happiness, has been employed in forming a road to destruction. The ingenuity of man is ever at work to discover the means of gratifying his appetites; the globe has been traversed in every direction to find food to minister to his sensual wants. Within due limits such indulgence is excusable; but the healthy conformation of man requires repose; and appetites, constantly pampered to satiety,

and then immediately stimulated into a new existence, to be again indulged, cease, after a time, to answer to the stimulus, and leave the worn-out sensualist in the depths of hypochondriasis. Thus it is, that we are daily witnessing the effects of fermented liquors upon the animal economy. Their immediate influence in raising the animal spirits, and inducing cheerfulness, is fondly seized on; they stimulate the brain to preternatural action,—a buoyancy of feeling and sharpness of wit, beyond our healthy capabilities, are attained; but, unfortunately, this state is short-lived, and a corresponding depression follows. The over-action of the brain is succeeded by a want of energy. By a repetition of the stimulus, the buoyancy may be restored, though each time with more and more difficulty, and invariably terminating in a temporary hypochondriasis, which ultimately becomes permanent.

The same process is gone through, and the same effects follow, when an unguarded indulgence in eating is yielded to, more especially of savoury and *piquant* dishes. The artificial excitements of fashionable life are equally pernicious; and the sparkling vivacity of the midnight ball, with its dazzling glare of light, and enchanting strains of music, must be paid for by a morning of listlessness and dejection. The repetition of these scenes, however, soon destroys the evening's hilarity, while the subsequent morning depression as gradually increases, until it leaves the votary of fashion a dispirited hypochondriac.

Such is a sample of the almost innumerable ways in which civilization conduces to the production of this disease: they all temporarily excite the brain to preternatural vigour, which is subsequently followed by a corresponding depression. The repetition of these changes, after a certain period, begets a state of brain that cannot be easily stimulated to its proper activity, and which frequently lapses into a permanent depression or weakness.

Before quitting the causes of this disease, I must particularize one more of the methods by which it is generated in civilized society, because it has latterly been too much overlooked by the profession; I allude to the undue indulgence of the sexual appetites. Whether feelings of shame and modesty are the products of an artificial mode of life, I shall not stop to inquire, but merely observe in passing, that as in a state of nature no restraint is exercised, and the passion is gratified whenever the appetite arises, so there is but little temptation to excite it, when the appetite does not exist. But the laws of society having placed curbs and restrictions upon the indulgence of this propensity, it is not to be wondered at, that those, who find themselves emancipated from them, should occasionally give way to a license, as little calculated to benefit their physical constitution, as was their previous continence. The ancient medical writers have fully re-

cognised this source of disease, and have pointed out the extreme cases, under the title of tabes dorsalis. A perusal of some of their works would not be uninstructive to many modern practitioners, for though there can be no doubt, that much misery and mischief may be done by too constantly and indiscriminately dwelling on such themes, and although the utmost circumspection is necessary, to assure ourselves that we are not mistaking the cause, it would be a slur on the practitioner to allow a patient to continue to lay himself open to the inroads of disease, while administering remedies for its cure. It is needless for me to enlarge further on this point, as its *modus operandi* is similar to other causes. I shall conclude simply by stating my conviction, that it is an intractable, and by no means unfrequent cause of hypochondriasis.

The Treatment of Hypochondriasis.—The treatment is much simplified by correct views of its nature; we then perceive how futile all dependance on specific remedies must be. What can be expected from purgation? What is to be gained by mercury? How often must disappointment follow the use of tonics and sedatives! Stimulants, too, are worse than useless. There is, in truth, no direct measure yet discovered for recruiting the exhausted energy of the nervous system. Medicine operates indirectly, by improving and preserving the general health, and, employed with this intent, is sometimes of great value. Our first care, however, should be, if possible, to trace out and remove the exciting cause, and then to place the patient as far as we can, without the pale of predisposing circumstances. Frequently there is no difficulty in accomplishing these objects. It often happens that the disease has so absorbed the whole faculties, that he is ready to renounce all old pursuits and associates; in fact, former pleasures have so surfeited him, that he no longer feels a desire for them.

There is one exception to this rule, which embraces unfortunately a considerable proportion of these cases. It consists of those unhappy individuals, whose malady arises from the indulgence of violent passions, injured pride, sorrow, unsated revenge, &c. &c., when to the corroding influence of these emotions is added the melancholy, consequent on the exhaustion they occasion, the disease assumes a degree of inveteracy, that can only be overcome by such a moral discipline as the sufferer will rarely submit to, and as the physician seldom has it in his power to enforce.

It is scarcely necessary to observe, that in treating on this most important point, the medical adviser should proceed with the greatest caution. If he oppose preconceived opinions too violently, his patient will directly conclude that he does not understand his case; while, if he fail to make him aware of the *fons et origo mali*, he can never hope to effect a cure. Where

the brain has been exhausted by dissipation, of whatever kind, the prospect is more favourable, because the patient readily admits, and speedily abandons the causes of his disease. In either case, the substitution of pleasing for painful sensations is the first point necessary for this purpose. He should be led to trust firmly in the hope of recovery; and his confidence should be gained by sympathy, and a timely display of an intimate acquaintance with his sensations. The same indication is fulfilled by hinting a suitable occupation for his mind: hence nothing can be more improper than to advise him to quit his ordinary occupations, as is frequently done. If this is ever justifiable, it is only when he is in such circumstances as will admit of his taking an excursion in the country. Where, indeed, that is practicable, it is a remedy that seldom fails of affording the greatest benefit. But he must never be allowed to remain idle at home, brooding over his miseries. It may be difficult to force those who feel sinking from languor and fatigue, to undertake any duties that require either mental or bodily exertion; this must be accomplished by degrees. If they have forsaken their business and usual exercises, they must be persuaded to assume them gradually, and encouraged to disregard those sensations of uneasiness that beset them, in their first attempts, by the assurance that the more they persevere, the less lassitude will they suffer.

I have endeavoured to show the power of heat in predisposing to this complaint; it is, perhaps, one of the most direct agents for exhausting the nervous energy of animal life. Its stimulating qualities are at first apparent, and the subsequent languor is what we daily meet with in the drawing-rooms of the affluent. When the vitiated air of crowded assemblies is superadded, it becomes doubly injurious; hence the hypochondriac should be warned not to attend theatres, balls, or even churches. On the contrary, he should expose himself as much as possible to a cold, pure air; and when at home, should never approach the fire, nor sit in a room heated by a closed stove.

Medicines are only capable of relieving those collateral diseases that may be weighing down the vigour of the frame, and thus exhausting the nervous energy. Hence small bleeding, leeching, or cupping, may be recommended where plethora is obviously oppressing the strength; and saline aperients may be prescribed with the same intent. But such remedies should be employed with caution, and only when urgent symptoms call for them. This state may generally be removed by a restricted diet and moderate exercise; as a cure for hypochondriasis in other circumstances, they are not merely useless, but decidedly injurious. Tonics, and more especially the vegetable bitters, conjoined with alkalies, are of more general application. When the digestive functions are deranged, as they frequently are, our first care

should be to restore them to their healthy action, since no nervous energy can be gained while the pabulum of the system is cut off by an impaired digestion. At the same time, too much stress must not be laid on this head; it should be remembered that we are not curing the disease by attending to the stomach and bowels, but simply relieving an ailment that tends to aggravate the complaint. On this account, attention to diet is often proper. When the stomach is not endowed with strong powers, hard and indigestible foods should be avoided. For the same reason, anything fat or acescent should be forbidden. Nevertheless, these restrictions are not to be enforced in all cases; in the majority, the state of the stomach is not such as to require them. We should examine carefully before we harass our patients by any needless rules for diet, the observance of which can only serve to keep painfully before their minds the recollection of their maladies, at all times too apt to occur to them. There are, however, certain articles that must be prohibited in all cases. These are, fermented liquors of all kinds, such as beer, wine, spirits, &c.; also spiced foods and peppers, all of which should be indulged in with great caution; they act like heat, as excitants, and thus tend further to exhaust the already exhausted powers of the brain. Here, again, we must act with circumspection. When a person has been long habituated to the free use of liquors, the sudden withdrawal of them induces a state of depression not easily overcome; yet, in every instance, they should be gradually decreased, and speedily relinquished, and when necessary, medicated stimulants should be substituted. Of these, ammonia is the most generally applicable; it has a peculiar influence on the mind, which scarcely any other medicine possesses, and, I think, it may sometimes be beneficially employed. The temporary change that follows, and the suspension of the morbid train of ideas, are often succeeded by a more happy condition. It should be exhibited in small successive doses for several days. Violent stimulants suddenly administered, cause a temporary hilarity, but when their effects cease, a deeper shade of oppression ensues. But by a proper and well-timed administration of this remedy, the mind may be retained in a quiescent state for so long a period, that either the morbid ideas are lost, or only imperfectly recur. What is here said of ammonia, will by no means apply to the generality of stimulants, such as wine and spirits; these are always dangerous remedies, and almost invariably produce mischief, when allowed to be taken at the patient's own discretion; even in medical hands, they are found less manageable and less efficacious than ammonia.

If there is an agent that has a direct influence over this complaint, it is the application of cold to the head. Cold water should be poured over it twice, or even three times a-day.

Where the patient is strong, this may be done by pouring it in a stream from the spout of a kettle, or by making him hold his head under the cock of a cistern for a minute or two, while the water is running. When, however, his age or his debilitated condition will not admit of the use of so violent a remedy, a local shower-bath may be made with a moderate-sized watering-pot; and, if necessary, the water may at first be poured over the head tepid, and after a few days, reduced to a lower temperature. I have seen so much gained by this plan, that I invariably adopt it; and I have lately heard that it forms the principal part of the treatment of a "*reverend*" empiric, who is just now advertising himself to the town.

It is essential that the quantity of sleep should be regulated. Hypochondriacs often sleep indifferently, and yet continue in bed till near the middle of the day. As a general rule, it may be said, they should not be allowed to lie in bed longer than eight hours. They should retire to rest early—say 10 or 11 o'clock—and be made to rise at 6 or 7 in the morning. In fact, they should be directed to get up as soon as they awake, even though this should be four or five o'clock. By adopting this plan, they would be deprived of some repose the first night, but would invariably sleep the longer and the sounder on the succeeding; and it would rarely happen, however badly they may have previously rested, that they would not get eight hours' sound repose, after having for a few mornings been made to leave their beds, without indulging in several hours of half-sleeping and half-waking. This is the more important, as these very hours of indulgence, as I have termed them, are often those in which the morbid imagination is wont to be overshadowed by its darkest clouds, and the hypochondriac's dreams come thick and fast upon him. When insanity is creeping over a patient, it is at this period of the day that it is most observable.

The last remedy I shall point out is horse exercise. It would be difficult, perhaps, to know the precise manner in which it acts. If I might hazard a hypothesis, I should say, the constant jolting of the body causes the patient to inspire more deeply, and to expire more completely, than in other exercises, even of a more violent description, and therefore, that there was a more constant change of air in the lungs. However this may be, I can vouch for the fact, that there is no exercise so beneficial in this complaint. I would recommend it to be tried in every case, where circumstances admit of it.

In conclusion, Gentlemen, I beg that this essay may not be considered as presenting an epitome of all that might be said on this interesting topic; I have merely thrown together a few hints, gathered from my own experience, and certain views, which, if I am not entitled to call them my own, because they have possibly

been entertained by others, are sufficiently novel to excite attention, and so far based on observation as to call for investigation. The disease has long been misunderstood by the profession; and hence one source of the ill success that has attended our practice. I believe careful attention will bring it as much within the reach of medicine, as any other chronic disease. It does not admit of the same speedy and direct relief which many other complaints, more sudden in their attack, and more vehement in their progress, do; but a moderate perseverance in judicious measures, founded on a right apprehension of its nature and causes, will gradually eradicate it.

ARTICLE VI.—*On the Art of Percussion, as applied to the Diagnosis of Thoracic and Abdominal Diseases. By* JOHN HUGHES BENNETT, M.D. Edin., *Lecturer on Clinical Medicine, formerly President of the Parisian Medical Society, &c.*

There can be little doubt, that mediate percussion is capable of furnishing much more valuable and exact information than is generally supposed. Every one who has attended the wards of M. Piorry must have been struck with the precision and exactitude with which he indicates the size and form of the thoracic and abdominal organs. I have often seen him thus map out, as it were, on the surface of the skin, with ink, the size and form of the heart, arch of the aorta, liver, spleen, kidney, &c., and indicate, to the eighth of an inch, the exact height of pleuritic effusion, or the margin of circumscribed pneumonic dulness. At first, indeed, this exactitude seems to partake so much of the marvellous, that the looker-on feels somewhat sceptical regarding its truth, and numerous individuals who visit his wards *en passant*, together with many experienced practitioners and teachers in Paris, (themselves, of course, unable to limit a single organ,) openly ridicule the procedure, as partaking more of charlatanism than of medical skill. He, however, who follows out the cases, witnesses the accuracy of his diagnosis, as revealed by post-mortem examinations, and endeavours to learn the art of percussion, soon convinces himself that there is neither imposture nor magic in the procedure, and that, however skilful M. Piorry or his *internes* may be in mapping out the different organs of the chest and abdomen, he also may do the same by means of attention and some practice. This is the plan I have myself followed; and, although far from possessing the great dexterity of the modern master of percussion, I have satisfied myself of the great practical value of his mode of proceeding. Convinced, also, that the difficulties experienced by the learner may be much dimi-

nished, I shall in this communication endeavour to give such short practical rules as may facilitate the progress of those who desire to perfect themselves in this most useful art.[1]

In percussing, M. Piorry uses a circular ivory pleximeter, which he generally strikes with the tips of the first, second, and third fingers of the right hand, brought into a line, and pressed together by means of the thumb. The reiterated blows which it is necessary to give the pleximeter, during a careful examination of all the thoracic and abdominal organs, demand considerable physical exertion. This duty can scarcely be performed even by an expert percussor in less than half an hour; and if three or four patients are to be examined, it becomes very arduous. I have often seen M. Piorry himself much exhausted from the exertions he has undergone in this way, from visiting a single ward. But the learner undergoes still greater fatigue, from the numerous repetitions he is under the necessity of making before he is satisfied. The continual blows, also, on the tips of the fingers, (the nails being of course cut very short,) induce, at first, great pain and tenderness in them; and in my case, the skin surrounding the root of the nails became so greatly swollen and inflamed, that I was, for a time, obliged to suspend all practical examination. Indeed, those who amuse themselves occasionally by merely tap-

[1] None of the works on auscultation in the English language attach sufficient importance to percussion, and the authors appear practically unacquainted with the precision which it is possible to arrive at by means of the pleximeter. Dr Forbes, for instance, when describing percussion, says,—"By one well versed in *direct* percussion, an instrument will not often be needed in the exploration of the chest, as his experience will enable him to evade most of the inconveniences attending the former." —*Cyclop of Prac. Med.*, vol. i., p. 220. This passage could only have been written by an individual little practised in the art of percussion. In the same article a considerable space is wasted in endeavouring to show the superior advantage of using the fingers of the left hand as a pleximeter, "the *back* of the fingers being uppermost." Now, those who choose to use the fingers in this way will often find it more advantageous to keep the back of the finger in contact with the skin, as is practised by M. Louis. Dr Forbes also states, that with the finger we can produce sounds as definite as by employing an ivory pleximeter. I have certainly heard MM. Louis, Bouillaud, Barth, and others, elicit very clear sounds by percussing on the index finger of the left hand, but deny that they could ever produce the clear sounds which may be done through the medium of an ivory pleximeter. Moreover, I have never seen any one accurately limit the size of an organ by the mere use of the fingers, and am perfectly convinced, from the vagueness and looseness which characterise the whole of Dr Forbes's article on this subject, that he himself has never succeeded in doing it. Even Dr Williams, a much greater authority, prefers the fingers. He says, "Little need be said about pleximeters, for they are not generally necessary; M. Piorry much exaggerates the advantages to be derived from them."—*Library of Medicine*, vol. iii., p. 10. Such also appears to be the general opinion of the profession, and I have frequently heard it stated by practitioners, that they can do with their fingers all that M. Piorry or others can do with pleximeters. To such statements there is only one reply. Whenever a similar assertion is made to me, I invite the gentleman to make his appearance at the bed-side of the patient in some public hospital or elsewhere, and limit the dullness of the heart or some other organ. But, singular to say, none of the numerous invitations thus made have ever been accepted.

ping or flipping the chest and abdomen, can form no idea of the pains and attention required to learn what may be termed the *real* art of percussion.

Without knowing how to strike, and to produce clear tones, we can never educate the ear, or the sense of resistance. This preliminary part in the art of percussion, requires a certain dexterity, which some find it very difficult to obtain. The difficulty seems to depend, in some cases, on a deficiency in the proportions usually existing between the length of the fingers. Thus, I have seen more than one person who had the index finger nearly an inch shorter than the middle one, and who, consequently, found it impossible to strike the pleximeter fairly with the tips of two fingers at once. By far the most common cause of failure, however, is want of patience and perseverance to overcome the first mechanical difficulties; and there is every reason to believe, that could this be surmounted, accurate percussion would become more universal and better appreciated.

Numerous inventions have been made for this purpose. I have been informed, although I do not know how far correctly, that M. Piorry has himself endeavoured to perfect a plexor, but has never succeeded satisfactorily. Balls of caoutchouc, attached to handles of whalebone,—rods covered at their extremity with leather, or some soft material,—rims of Indian rubber attached to the stethoscope,—and other contrivances have been thus employed. Dr Burne has lately invented, and given a description of a new plexor. (*Medical Gazette*, 1840–41, vol. ii. p. 468.) It is not my purpose here to enter upon a criticism of these different inventions, for never having employed any of them, I am of course utterly incapable of giving any opinion regarding their respective merits.

The plexor which I have for some time employed myself, I first saw used by Professor Barez of Berlin. It appeared to me in every way well qualified to meet the wants of the practitioner and of the student. I have used it continually for the last ten months, and am enabled to perform all the manipulations with it, map out the thoracic and abdominal organs, &c., as well as if I struck the pleximeter with my fingers, and this without the smallest fatigue to myself. It is the invention of Dr Winterich of Wurzburg, who thus describes the advantages of percussing with this instrument. (*Berliner Medicin. Central. Zeit. Januar.* 1841.)

1. The tone produced, in its clearness, penetrativeness, and quality, far surpasses that which the most practised percussor is able to occasion by other means.

2. It is especially useful in clinical instruction, as the most distant student is enabled to distinguish the varieties of tone with the greatest ease.

3. The application is much less painful for the examiner and the patient than any other mode of percussion. A very slight force will suffice to produce tones necessary for an exact diagnosis.

4. It at once enables those to percuss, who, from peculiar formation of the fingers, want of opportunity, time, practice, &c., are deficient in the necessary dexterity.

5. It enables the examiner to draw conclusions, under circumstances, and from percussing certain portions of the surface, where, by other modes of percussion, no result can be drawn from difference in tone.

Dr Winterich, however, remarks that the feeling of resistance is distinguished less clearly with the hammer; but he considers this in every way secondary to the production of a clear tone. When M. Piorry saw the instrument which I brought with me to Paris in the spring of 1841, he made the same objection to it. I can however state, that after using the hammer some time, the feeling of resistance is very little affected by it, and that we become as conscious of the different densities of the organs by *means* of this hammer, as by means of the fingers.

With respect to the tone, every one who has used it can fully concur in Dr Winterich's commendations. I showed it to M. Louis of Paris, and Professor Williams of London, who both detected at once the superior tone that could be produced with it. In Edinburgh it is now commonly used by several practitioners, and Drs Henderson and Spittal employ it continually in the wards placed under their charge in the Royal Infirmary of that city.

The pleximeter recommended by Dr Winterich is circular like Piorry's, but somewhat smaller. I have found an oval one most convenient. These are sold in most of the instrument-makers' shops in Paris. I have caused the size to be reduced in such a manner that the length is two inches and breadth one inch. This pleximeter may be applied with great precision to every part of the chest, even in emaciated subjects. It may be made of ivory, wood, or metal. An inch-and-a-half scale drawn upon the surface, will be found useful in measuring the exact extent of the dullness, and determining the differences which may occur in it from day to day.

By means of the instruments now described, every student acquainted with the relative situations of the different thoracic and abdominal organs, is himself enabled, without other preliminary education, to detect the different degrees of sonoriety they possess in a state of health and disease. I may say that by means of these instruments, after one hour's practice on a dead body, he is placed on a par (as regards the art of percussion) with the generality of experienced practitioners in this country; and several of my pupils, after one month's employ-

ment of them, are enabled to mark out accurately on the surface of the body, the size and form of the heart, liver, spleen, &c. I make this statement merely to convince the profession that the difficulty experienced by every one at first in employing the fingers, is completely removed by using the pleximeter and hammer now recommended.

Of the different Sounds produced by Percussion.—The sounds produced by percussion arise from the vibrations occasioned in the solid textures of the organ percussed. The different density and elasticity of these textures will, of course, more or less modify the number and continuance of the vibrations, and give rise to different sounds.

M. Piorry considers that nine elementary sounds are thus formed, which he has designated, from the organ or part which originates them, "*femoral*, *jecoral*, *cardial*, *pulmonal*, *intestinal*, *stomacal*, *osteal*, *humorique*, and *hydatique*." I consider that all these sounds may be reduced to three elementary ones; that, in point of fact, there are only three tones occasioned by percussion, and that all the others are intermediary. These three tones are respectively dependent, 1*st*, On the organ containing air; 2*d*, On its containiug fluid; and, 3*d*, On its being formed of a dense uniform parenchymatous tisssue throughout. These tones, therefore, may be termed the *tympanitic*, the *humoral*, and the *parenchymatous*. Percussion over the stomach gives the best example of the first kind of sound; over the distended bladder, of the second; and over the liver, of the third. The terms jecoral, cardial, pulmonal, intestinal, and stomacal, however, may be used to express those modifications of sound produced in percussing respectively the liver, heart, lungs, intestines, and stomach.

No description will suffice to convey proper ideas of the various modifications of tone occasioned by percussing over the different thoracic and abdominal viscera. To become acquainted with these, it is absolutely necessary to apply the pleximeter to the body, and then half an hour's practice with this instrument and the hammer will be sufficient to render any one conversant with those which may be heard in a normal state.

It must be remembered, however, that the tones even then may vary according to circumstances. Thus, immediately after a deep inspiration, the pulmonal sound will be rendered more tympanitic, and, after expiration, more parenchymatous. In the same manner, the stomach and intestines may give out different sounds according as they are more or less full of contents. In the left or right iliac fossa a clear tympanitic sound will be heard when the intestine below is empty, and a dull parenchymatous sound when it is full of feces.

A study of the different modifications of sound, which various organs thus produce in a state of health, readily leads to the

comprehension of the sounds which may be elicited in a morbid state. Thus, the lungs may occasion a dull or parenchymatous sound, from solidification, the result of pneumonia or tubercular deposition, or on the other hand, become more tympanitic, from the presence of emphysema. The abdomen may give out a parenchymatous sound, from enlargement of the uterus, or an ovarian tumour; or a humoral sound, from the effusion of fluid in the cavity of the peritoneum.

Of the Sense of Resistance produced by Percussion.—By the sense of resistance, is understood the peculiar sensation resulting from those impressions which are communicated to the fingers on striking hard, soft, or elastic bodies. It is of the greatest service in determining the physical condition of the organ percussed. The sense of resistance bears relation to the density of the object struck,—hence firm and solid textures offer more resistance than those which are soft or elastic. Of all the thoracic and abdominal organs, the liver presents the greatest degree of resistance, and the stomach the least. The presence of fluid in the hollow viscera, offers a medium of resistance between the parenchymatous organs on the one hand, and those containing air on the other. But air much condensed, or fluid contained within the rigid walls of the thorax, may offer a considerable degree of resistance.

The sense of resistance should be as much educated by the physician as the sense of hearing, and it would be difficult for an individual, practised in the art of percussion, to say which of these two points is most valuable to him. Both are only to be learnt by practice, and considering it perfectly useless to describe that in words which may be learnt in half an hour, by the use of the pleximeter and hammer on a dead body, or the living subject, I shall now proceed to describe the

General rules to be followed in the practice of Mediate Percussion.—1. The pleximeter should be held by the projecting handles between the thumb and index finger of the left hand, and pressed firmly down upon the organ to be percussed. Much depends upon this rule being followed, as the sound and sense of resistance are considerably modified according to the pressure made by the pleximeter. A very easy experiment will prove this. If, for instance, the pleximeter be struck while it rests lightly on the abdomen over the umbilicus, and again, when it is pressed firmly down amongst the viscera, the change in tone will be at once perceived. In the first case a dull sound is produced, from the muscles and integuments being alone influenced by the force of the blow; in the second case, a clear tympanitic sound is occasioned from the vibration of the walls of the intestine. In every instance, therefore, the pleximeter should be so held and pressed down, as to render it, so to speak, a part of the organ we wish to percuss.

2. Great care must be taken that no inequality exist between the inferior surface of the pleximeter and the skin. Firmly pressing it down will always obviate this when the abdomen is examined. As regards the thorax, however, the groove over the anterior mediastinum, the prominence of the clavicles of the ribs, in emaciated subjects, may allow a hollow to exist under the instrument, by which a deceptive tympanitic sound is occasioned. By a little management, however, with the small and oval pleximeter I have recommended, this may readily be avoided.

3. The hammer should be held, as advised by Dr Winterich, between the thumb and the first and third fingers, the extremities of which are to be placed in the hollows prepared for them in the handle of the instrument. By some these are considered useless, but in all cases where slight differences in tone are to be appreciated, I have found this the best mode of employing it. Ordinarily, however, it will be sufficient to hold it by the extremity of the handle, merely in such a manner as will enable the practitioner to strike the pleximeter lightly, or with force, as occasion may require.

4. Care must be taken to strike the pleximeter fairly and perpendicularly. Unless this be done, vibrations are communicated to textures in the neighbourhood of the organ to be percussed, and fallacious results are the consequence. If, in percussing the lungs, for example, the blow be made obliquely, we obtain the dull sound produced by the rib, and I have seen considerable error in the diagnosis thus occasioned.

5. A strong or gentle stroke with the hammer will modify the tone and sense of resistance, inasmuch as the impulse may be communicated by one or the other to a deep-seated or a superficial organ. Thus a gentle stroke will elicit a pulmonal tympanitic sound just below the fourth rib, where a thin layer of lung covers the liver, but a strong one will cause a jecoral parenchymatous sound. At the inferior margin of the liver, on the other hand, where a thin layer of the organ covers the intestines, the reverse of this takes place, a gentle stroke occasioning a dull, and a strong one a clear sound.

6. By withdrawing the hammer immediately after the blow, we are better able to judge of the sound; by allowing it to remain a moment, we can judge better of the sense of resistance.

7. The integuments should not be stretched over the part percussed, as when the stethoscope is employed, for an unnatural degree of resistance is thus communicated to the hand of the operator from the muscular tension. In every case, especially where the abdomen is examined, the integuments and superficial muscles should be rendered as flaccid as possible.

8. It is always best to percuss on the naked skin. It is not absolutely essential, however, and in cases where, from motives of

delicacy, it is desirable that the chest or abdomen be not exposed, it only becomes necessary that the covering of linen or flannel be of equal thickness throughout, and not thrown into folds.

9. The position in which the individual examined should be placed, will vary according to the organ explored. In percussing the thoracic organs and the liver, a sitting position is most convenient. The stomach, intestines, uterus, bladder, and abdominal tumours or effusions, are best examined when the patient is lying on the back, with the knees flexed so as to relax the abdominal walls, and, if necessary, the head and neck bent forward, and supported by pillows. In percussing the spleen, the individual should lie on the right side, and when the kidneys are examined, he should lie on the breast and abdomen. In cases of effusion into the serous cavities, a change of position furnishes most valuable indications.

10. In percussing any particular organ, the pleximeter should be first applied over its centre, where the sound and sense of resistance it may furnish, are most characteristic. Two blows with the hammer are generally sufficient to determine this. From the centre, the pleximeter should be moved gradually towards the periphery, or margin of the organ, and struck as it proceeds with the hammer, now forcibly, now lightly, until the characteristic sound of the next organ be elicited. The pleximeter is then gradually to be returned towards the organ under examination, until the difference of tone and sense of resistance become manifest. In this manner having first heard the two distinct sounds well characterized, we shall be better enabled to determine with accuracy, the limit between the one and the other. This may be done exactly after having determined, whereabouts the line of separation is, by placing the long diameter of the pleximeter transversely across it, and striking, first one end of the instrument, and then the other, till the precise spot is determined. This spot should now be marked, by placing with a pen a dot of ink on the skin. The opposite and then other portions of the margin of the organ should be limited in the same manner, and these in turn should be marked with dots of ink, until the whole organ be completely examined. Then by uniting all these dots with a line of ink, we have the exact form of the organ drawn upon the skin. When it is thought necessary to render the first mark permanent, in order to see if any subsequent change take place in the size of the organ, or extent of the dullness, it may be rendered so, by carrying lightly a stick of argent. nit. over the ink line, while it is still moist.

Special rules to be followed in percussing particular organs.—The short rules and practical remarks about to be given, are derived partly from the precepts of M. Piorry, as I have heard him de-

liver them in the wards of La Pitié, and partly from my own experience.

Lungs. Percussion of the lungs generally bears reference to a change in density, which is only to be detected by comparing the healthy with the morbid portions. The great practical rule here to be followed, is to apply the plexímeter to both sides of the chest in succession, with the same firmness, exactly in the same situation, and let the blow with the hammer be given with the same force. Care must be taken that the position of both arms be alike, as the contraction of the pectoral muscles on one side more than on the other may induce error. In short, every circumstance must be the same before it is possible to determine in delicate cases, either from the tone or sense of resistance, whether change of density exist in the lungs. When circumscribed alterations are discovered in the pulmonary tissue, their limits may be marked out on the surface of the skin, in the manner previously indicated. In this way, I have frequently succeeded in determining with accuracy the size and form of circumscribed indurations, arising from partial pneumonia and pulmonary apoplexy. Under the clavicles, the plexímeter must be applied with great firmness. Inferiorly, a thin layer of lung lies over the superior surface of the liver; and to determine the exact place where its inferior border terminates, the blows with the hammer should be very slight. Posteriorly, also, the plexímeter must be firmly applied, and the force of the blows considerable: but they should decrease in force inferiorly, where a thin layer of lung descends over the liver much deeper than anteriorly.

In a healthy state, a distinct difference may be observed in the sonoriety of the lungs immediately after a full expiration and a full inspiration. This does not take place when the tissue becomes indurated from any cause; and thus we are furnished with a valuable diagnostic sign. Congestion of the lung, and pneumonia in its first stage, causes only slight dullness and increased resistance, which, however, are readily detected by the practised percussor. In the second and third stage of pneumonia, and in apoplexy of the lung, this dullness and resistance are well marked, and even an impression of hardness and solidity communicated to the hand. When, however, the lung is studded with tubercles, the induration is most intense, and the greatest degree of resistance communicated.

Partial indurations from pneumonia, apoplexy, or tubercular deposition, may be detected by percussion, even when deep-seated and covered by healthy portions of the lungs. In this case, by pressing with the plexímeter, and striking lightly, a tympanitic sound only is heard; but by pressing the plexímeter down firmly, and striking with force, the dull sound may be elicited and circumscribed. When induration, however, exists inferiorly

in those portions of the lungs which overlap the liver, it requires great practice to detect them with certainty. Caverns in the lungs, when large and filled with air, induce a tympanitic sound; but they are generally more or less full of viscous and fluid matters, and give rise to dullness.

Two or three ounces of fluid may be detected in the pleural cavity, by causing the patient to sit up. It is readily distinguished posteriorly, from the dullness of the liver on the right side; on the left, however, the limit between it and the spleen is not so well marked. The height or level of the fluid is readily determined, and should be marked daily by a line made with nitrate of silver. If the effusion be only on one side, the peculiar humoral dullness is more easily detected. It disappears on placing the patient in such a position as will cause the fluid to accumulate in another part of the pleural cavity, when the space, which was previously dull, becomes clear. When the effusion entirely fills the pleural cavity, no limit of course can be detected; but, even then, the dullness is distinguished from that of the liver by the diminished feeling of resistance.

When air is effused into the pleura, the sound is like that of a drum, and readily detected.

Heart. To mark out the precise limits of the heart, constitutes the first difficult lesson in the art of percussion. M. Piorry commences by determining the clear sound at the upper end of the sternum, and bringing the pleximeter gradually downwards till the dull sound of the heart be heard. I have found it best to place the instrument first under the left nipple, where the cardial dullness is most intense; then to draw it upwards, striking it continually with the hammer, until the clear sound of the heart be elicited, then, by bringing it down again towards the heart, we shall readily distinguish the line where cardial dullness commences, and thus limit the superior margin of the organ. The same method is to be followed in determining the situation of the lateral margins, only drawing the pleximeter outwards or inwards, striking more and more forcibly with the hammer, until the clear tympanitic sound of the lung only be heard. I have found it difficult to determine the situation of the apex of the heart, for as this rests on the diaphragm, and this again upon the left lobe of the liver, it cannot readily be distinguished from them. M. Piorry recommends, that the superior margin of the liver be followed with the pleximeter, until a more obscure sound and less resistance be met with. I have no doubt that, with great practice, the apex might be limited in this manner, but hitherto I have not succeeded in accomplishing it. The size of the heart, however, may be pretty accurately estimated by limiting its superior and lateral margins.

The normal size of the heart differs in different persons. As

a general rule, however, it may be considered that, if the transverse diameter of the dullness measure more than two inches, it is abnormally enlarged. It has been known to measure seven inches. (Piorry). In hydropericardium the dullness has been remarked to exist rather at the superior part of the sternum, than on one side or the other. (Piorry, Reynaud.) In hypertrophy, by dilatation of the right ventricle, the increased extent of the dullness stretches towards the median line, and sometimes passes over it. In similar hypertrophy of the left ventricle, the dullness extends on the left side, more or less according to the increased size of the heart. In concentric hypertrophy, there is no or little enlargement, but the density is greatly increased, which is readily detected by the feeling of resistance.

The cardial dullness may be augmented, from the heart being simply distended with blood, as in cases of plethora. Under these circumstances, it rapidly diminishes after blood-letting, a fact established by M. Piorry, and one which is of great service in diagnosing this condition of the heart from hypertrophy. In the latter disease, as the increased volume depends upon enlargement or thickening of the muscular parietes of the heart, it is little affected by blood-letting.

The presence of tubercules in the lungs surrounding the heart; aneurisms or other tumours, pressing upon, or in the neighbourhood of, the organ; hypertrophied liver, extensive empyema, &c. &c., may render its mensuration difficult or impossible.

Liver. Limitation of the size of the liver should be commenced by placing the pleximeter over the organ on the right side, where the dullness and resistance are greatest. It should then be carried upwards until the clear sound of the lung be distinguished, when it ought again to be brought down, and the limit marked. This limit, however, may indicate either the inferior margin of the lung, or superior convex surface of the liver. Now, as a thin layer of lung descends in front of the liver, it will be necessary to determine where the tympanitic sound ceases inferiorly, by striking gently with the hammer, and where the parenchymatous sound ceases superiorly, by striking forcibly, so that vibrations may be communicated to the organ through the layer of lung. The space between these two lines thus marked on the surface, is wider in some individuals than in others, and deeper and more extensive posteriorly than anteriorly. By carrying the pleximeter from the right side anteriorly, and then posteriorly towards the left of the patient, the whole superior margin may be thus detected, and marked with ink upon the surface, except where the liver comes in contact, through the medium of the diaphragm, with the apex of the heart. The inferior margin is for the most part readily detected. It must be remembered, however, that in the same manner as a thin layer of lung covers the

upper margin, so a thin layer of liver descends on the right side over the intestine. It is therefore necessary to be cautious in determining the inferior margins, for a tolerably strong blow with the hammer will give rise to a tympanitic sound from the intestine, heard through the liver. The lower margin, therefore, must be percussed in an inverse manner to the superior, and as we approach, the force of the blow should be diminished. The inferior margin of the liver is in general readily detected, from the contrast which its dullness and density produced on percussion present, contrasted with the tympanitic and elastic feel of the intestines and stomach.

The superior limit of this organ is generally found about two inches below the right nipple, and its inferior border under the lower margin of the ribs. The extent of the jecoral dullness in the healthy state is in general two inches on the left side, three inches in the hepatic region anteriorly, and four inches in the hepatic region laterally. (Piorry.)

Variations in the size of the liver, from congestion, inflammation, abscesses, hydatids, tumours, atrophy, &c. &c., may often be exactly determined by means of percussion. In icterus, the increase and diminution of this organ, as evinced by lines marked on the skin, will generally be found to bear a proportion to the intensity of the disease. When tumours are present, the inferior border often presents an irregular form. If the inferior lobes of the lung be indurated by tubercles or hepatization, it becomes difficult or impossible to draw the limit between them and the liver. When fluid effusion exists in the pleura, the increased density of the liver still serves to distinguish it, through the humoral sound of the fluid; and by changing the position of the patient, its upper edge in the majority of cases may be limited. In ascites, the patient should be made to lie on the left side, in order to measure the right lobe, on the right side to measure the left lobe, and on the abdomen to percuss it posteriorly. Sometimes the right lobe of the liver is so enormously hypertrophied, that its inferior margin extends nearly to the right iliac fossa. (Piorry.)

When the gall-bladder is much distended with bile, or contains gall-stones to any amount, it may readily be detected by percussion, and the dullness it occasions immediately under the inferior margin of the liver, anteriorly and somewhat laterally, be marked off. M. Piorry is enabled to do this in almost every case, but I must confess that I have often failed in detecting it.

Spleen. In percussing the spleen, it is necessary that the patient lie on the right side, and it is advantageous that the examination be made before rather than after meals. Anteriorly the sonoriety of the stomach and intestines causes the margin readily to be distinguished. Posteriorly, however, where the

organ comes in contact with the kidneys, this is impossible. Its superior and inferior margins may be made out by striking the instrument with some force, and following the rule, No. 10, previously given.

The general size of the spleen is about four inches long and three inches wide. (Piorry.) In diseased states it may be atrophied or enlarged. I have seen it measure ten inches long and six wide. A pleuritic effusion, ascites, pneumonia, or tubercular deposition in the inferior lobe of the left lung, may render a limitation of this organ difficult or impossible.

I am inclined to think, that if the size of the spleen were determined more often than it is in fevers, some curious results would be obtained. In several cases of so-called typhus fever admitted into M. Piorry's ward, percussion determined that the spleen was considerably enlarged, and a more accurate interrogation of the patients proved that the fever was intermittent. In the autumn of 1839, a man, previously healthy, entered La Pitié, who had been knocked down by the shaft of a cabriolet coming in contact with the left side. Considerable pain and swelling followed in the region of the spleen, and this organ was determined by percussion to be enlarged. The general fever which accompanied this local lesion, was of a distinctly intermittent type. As the spleen diminished in size, the fever disappeared. M. Piorry has published a somewhat similar case, where the intermittent fever arose after a fall on the left side, causing engorgement of the spleen. Bleeding and leeches only caused diminution of the local pain, but quinine cured the fever, and caused diminution of the splenic engorgement.[1] In undoubted cases of intermittent fever, where the spleen has been enlarged, I have frequently seen a dose of 50 grains of quinine diminish the size of the organ an eighth of an inch, and sometimes more, round its whole anterior margin, in twenty-four hours, which would indicate at least a diminution of a quarter of an inch in its longitudinal and transverse diameter. I am far, however, from thinking it fully established, that the real cause of intermittent fever resides in enlargement of the spleen, or that quinine acts especially on that organ, although many well-observed facts tend to this conclusion. Those who maintain, that enlarged spleen is the result, rather than the cause of the disease, may be asked, has the organ been accurately percussed in every stage of the disorder?

Stomach and Intestines. The sounds elicited by percussion of the stomach and intestines, are of the greatest service to the practitioner: 1*st*, As furnishing him with the means of determining the form of other organs, as the liver, spleen, or bladder; 2*dly*, As enabling him to distinguish the presence or absence of fecal or ali-

[1] Mémoire sur l'état de la Rate dans les Fièvres Intermittentes.

mentary matter; and, 3*dly*, As the means of diagnosing abdominal tumours. Hence it is incumbent on every physician to be able at once to recognise the difference between the tones furnished by the stomach, small and large intestines under various circumstances. To arrive at this knowledge, it is necessary to be acquainted with the relative positions of the different abdominal viscera, and the regions of the abdomen to which they correspond.

In exploring the abdomen by means of percussion, the plexi-meter should first be placed immediately below the xiphoid cartilage, pressed firmly down, and carried along the median line towards the pubis, striking it all the way, now hard, now gently, with the hammer. The different tones which the stomach, colon, and small intestines furnish, will thus be distinctly heard. The pleximeter should then be carried laterally, alternately to the one side, and then to the other, till the whole surface be percussed. In this manner, the different tones produced by the cæcum and ascending colon on the right side, and descending colon on the left, will be respectively distinguished from that furnished by the small intestines. The sounds and sense of resistance will be modified according as the different viscera are full or empty, as any one can determine by means of the pleximeter and hammer on his own body. When the intestines are full of fluid or solid contents, such portions may be circumscribed and marked out on the surface of the skin. I have thus often succeeded in determining the internal margin of the colon, in its ascending, transverse, or descending portions. Sometimes a portion of intestine is found lying between the abdominal walls and the stomach. The latter however may be readily determined, by pressing down the pleximeter, causing the patient to eat or drink, or by examining after dinner. The small intestines are almost never deprived of the tympanitic sound—a circumstance by which they may readily be distinguished from the stomach and large intestines. The distance of any particular knuckle of intestine from the abdominal walls, may be pretty accurately calculated, by the force necessary to be employed in pressing down the pleximeter, and striking with the hammer, in order to elicit a tympanitic or dull sound.

It is unnecessary to point out the numerous circumstances, and morbid conditions, in which percussion of the abdomen may prove useful in practice. Displacements of the stomach or intestines, femoral and scrotal hernia, mesenteric, ovarian, and other tumours, peritoneal adhesions and effusions, may all frequently be diagnosed, and their limits determined by a careful examination with the pleximeter and hammer. By means of percussion, even the nature of the tumour may often be arrived at, as for instance, whether it be fungus hematodes, scirrhous, encysted, osseous, &c., by the different derees of resistancee they

possess. Care however must be taken, not to confound with tumours an enlarged spleen or liver, a distended uterus or bladder, stomach full of alimentary matter, &c.

In a practical point of view, it is often useful to determine, by means of percussion, whether an enema or a purgative by the mouth is likely to open the bowels most rapidly. If, for instance, there be dullness in the left iliac fossa, in the track of the descending colon, that part of the intestine must be full of feces, and an enema is indicated. If, on the other hand, the left iliac fossa sound tympanitic, and the right sound dull, an enema is of little service, as it will not extend to the cœcum, and purgatives by the mouth are indicated.

Effusion of fluid into the peritoneum may be determined with great exactitude by means of percussion, and the height of the fluid marked, as in the case of pleuritic effusion. In the same manner, a change of position furnishes similar results.

Bladder. This viscus is only to be detected by percussion, when it is more or less distended, and rises above the pubis. It may then be distinguished, and its circular margin limited, by observing the tympanitic sound of the intestines, on the one hand, and the dull humoral sound furnished by the bladder, with increased resistance, on the other. When covered by intestines, it will be necessary to press down the pleximeter with tolerable firmness, but not in such a manner as to give the patient pain. In the infant, the situation of the bladder is not so deep in the pelvis, and a small quantity of fluid renders it cognizable by means of percussion.

A ready approximation of the state of the bladder will be found of great service in cases of apoplexy, delirium, imbecility, paraplegia, &c. &c. In several cases it has been found dangerously distended, on percussing the abdomen to determine the state of the intestines.

I have here only noticed those points and circumstances in the art of percussion which I myself have been enabled to accomplish, and which every one may acquire in a few months by care and attention. The nice and more delicate points I must confess I have myself not yet arrived at satisfactorily, but hope to be enabled to do so by continued practice. To these belong percussion of the kidneys, accurately limiting the left from the right ventricle, determining and marking out the ascending and transverse portions of the arch of the aorta, &c. For directions concerning these points, as well as for numerous details, experiments, cases, and practical remarks, having reference to what has been already noticed, I must refer to the admirable works of M. Piorry.[1] I

[1] De la Percussion Médiate, &c., Paris, 1828. Du Procédé Opératoire, Paris, 1831. De l'Examen Plessimétrique de l'Aorte Ascendante, et de la Crosse Aortique, &c. Archives Gén. de Méd., vol. ix., 1840, p. 431.

Fig. 1.

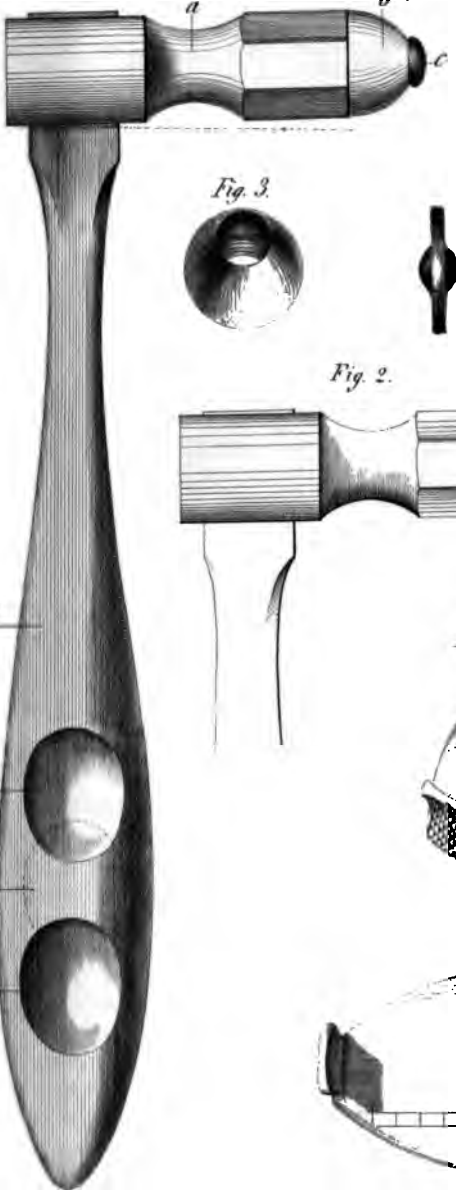


Fig. 4.

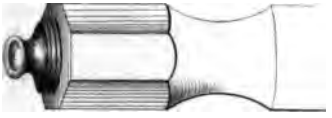


Fig. 3.

Fig. 5.

Fig. 2.

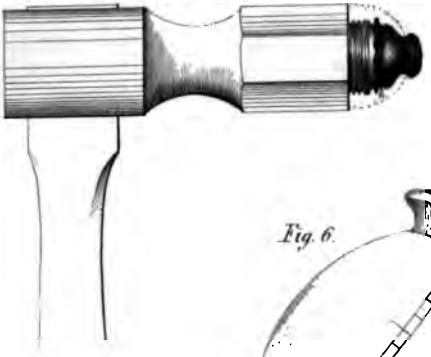
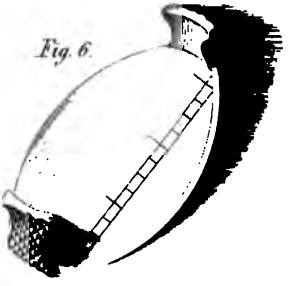


Fig. 6.



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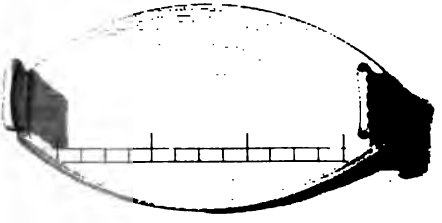

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shall esteem myself fortunate, however, if the remarks and rules now laid down in any way facilitate the important and difficult art of percussion, as applied to the diagnosis of thoracic and abdominal diseases.

EXPLANATION OF THE PLATE.

*** All the Figures are of the full size.

Fig. 1. The hammer. *a*, the head made of steel, brass, or iron; *b*, the capsule screwed on; *c*, the projecting disc of caoutchouc; *d*, the handle made of wood; *e*, depression for the thumb; *f*, *g*, depressions for the index and ring fingers.

[It will be observed that the head is not placed exactly at right angles with the handle, but that it has a slight obliquity upwards. This is necessary, because in employing it, the handle is almost certain to be somewhat elevated, and this slight obliquity even then allows the practitioner to strike the pleximeter perpendicularly.]

Fig. 2. The head of the hammer without the capsule, shewing the manner in which the caoutchouc is attached.

Fig. 3. The capsule separated, shewing the size of the opening through which the caoutchouc passes.

Fig. 4. The extremity of the head, showing the form of the nozzle to which the caoutchouc is attached.

Fig. 5. The front and edge of the caoutchouc, showing the manner in which it ought to be cut or prepared.

[Dr Winterich attaches much importance to the mode of preparing the caoutchouc. I have found that cutting a square piece of it, about a quarter of an inch thick, in such a way that two convex surfaces are presented, answers every purpose. One of these rests upon the concave surface of the nozzle, figured in the plate (fig. 4); the other projects through the capsule, (fig. 1, *c*.) The thin part is stretched over the lip, and tied, (fig. 2.)]

Fig. 6. The pleximeter drawn in perspective, shewing its thickness, the size of the handles, and their roughened external surface.

Fig. 7. The pleximeter seen from above, shewing the exact size of the instrument, and the inch and a half scale drawn upon its surface.

ARTICLE VII.—*On the Nature, Mechanism, and Treatment of Face Presentations.* *By* JAMES MARR, M.D. Edin., F.R.C.P.E., *Lecturer on Midwifery, and Physician-Accoucheur to the Royal Dispensary of Edinburgh.*

Perhaps there is no point connected with practical midwifery where so much discrepancy of opinion exists as regarding face presentations. This is the more wonderful, seeing that from their frequency they form a large proportion of the deviations from the natural position, which every obstetric physician must meet with in practice.

The proportionate frequency is seen from the following table:

	Number of Deliveries.	Number of Face Presentations.
Boivin . . .	20,517	74
La Chapelle . . .	22,243	103
Kilian . . .	17,000	122
Boer	6,555	58
Dubois . . .	10,742	30
Clarke	10,317	44
Collins . . .	16,654	33
Guy's Hospital . .	4,666	24
Total, . . .	108,694	488

This is about 1 in every 222 cases.

In former days face cases were considered preternatural, and so difficult as generally to require the operation of turning, the same as transverse presentations, before delivery could be accomplished. This was the opinion and practice of the accoucheurs of the last and preceding half of the seventeenth century. Smellie says, "when the face presents, resting on the upper part of the pelvis, the head ought to be pushed up to the fundus uteri, the child turned and brought by the feet, according to the directions that will be given when we come to treat of preternatural deliveries." (*Treatise*, vol. i. p. 238.)

Burton states, "The head may come with the face or chin towards the os uteri, having the back of the head lying backwards. * * * Therefore when the head presents in any of the above directions, and that the *os uteri* is sufficiently dilated, he must introduce his hand into the womb along the child's breast, to bring it forth by the feet." (*New System of Midwifery*, p. 200.)

The same opinion was held by La Motte, Cooper, Giffard, Fischet de Flechy, &c.

Other authors, averse to so formidable an operation as turning, proposed to alter the position by pushing up the face and bringing down the vertex. This was the plan recommended by Stein and Baudelocque, both of whom declare that the spontaneous termination of face presentations is only possible, when the fœtus is very small or the pelvis very large.

Most of the authors whom we have just quoted, if they failed in the operation of turning or rectifying the position, terminated the labour by the forceps or crotchet.

In opposition to these doctrines, we find, even as far back as 1685, Portal stating that face presentations may with safety be left to nature. His words are: "I have delivered several women whose children came with the face foremost, and always without any difficulty; it being only observed, that in such cases no violence must be used, but nature left to its own course, which done, there is no danger either of mother or child." But, unfortunately, in the preceding page, having stated that these cases are "plus contre nature," his observations regarding the natural termination did not meet with the attention it otherwise would have obtained. In 1769, W. Johnston in this country, in 1770, Deleuyre in France, and in 1789, Zeller in Germany, all declared that face presentations, though more tedious than when the head presents, may successfully be left to the unaided efforts of nature. Zeller cited 43 cases out of 3155 deliveries which terminated thus. He was followed by Boer, who carefully observed 80 face cases, of which none of the mothers suffered more than in ordinary labour, and only four children were still-born; of these only one required artificial assistance, the forceps being the mode of delivery adopted. Denman, I ought to mention, coincided with these authors. Strange to say, the same discrepancy of opinion still seems to pervade the profession in the present day. Thus Burns says, "in face presentations, some have advised that the child should be turned, and this is proper, if the membranes being still entire, any circumstances on the part of the mother render it desirable that the labour should be soon completed, at the same time that the pelvis is ample, and we expect an easy delivery of the head to follow that of the body. But if there be no urgency, from weakness, or any other state of the mother, or of the pains, it will be better merely to rectify the position of the head itself, by raising the forehead, turning the vertex obliquely down, and directing it to the left acetabulum." (*Midwifery*, p. 431.)

Davis is even stronger on the propriety of interfering in these cases. His words are, "when the face is discovered to present at the brim of the pelvis, at an early period of a labour, whether before or very soon after the escape of the liquor amnii, there

can, in the author's opinion, be no doubt as to the preferableness of turning to all other modes of treatment. That operation dexterously performed, would, at all events, give the child a good chance of preservation of its life; whilst it would also be the means of rescuing the mother on the very brink of impending danger." (*Obstetric Medicine*, p. 990.)

On the continent, the same view is espoused by Capuron, one of the most distinguished accoucheurs of the present day. He, like Mesnard, endeavoured to demonstrate by geometrical measurements of the pelvis, in reference to the child, that in face cases, delivery is impossible, without the assistance of art. (*Bibliothéque Méd. Analys. de Mme. La-Chapelle, &c.*) Flamant joins in the same view. (*Stolze Thèse*, p. 37.)

On the other hand, we have many authors of the greatest talent and experience, both on the continent and in this country, following Portal, Deleuyre, &c., and advocating the sufficiency and success of the unaided efforts of nature in these cases. Among these we may enumerate Mme. La-Chapelle, Chevreuil, Desormeaux, Velpeau, Bang, Pacoud, Kilian, Stolze, Blundell, Merriman, Ramsbotham, and Rigby.

Seeing, then, such very conflicting opinions on a matter of so much practical importance, I propose, in the first place, to glance shortly at the causes and mechanism of face presentations, and then to examine separately the different modes of treatment proposed, with the view of determining that which is the most successful, and which, therefore, ought to be pursued in these cases.

Causes.—These are still obscure. Burns says, "generally no evident cause can be assigned." Deventer ascribes them to obliquity of the uterus, whereby the occiput, being brought in contact with the brim of the pelvis, is caught there, while the pains continuing, the occiput being fixed, first the forehead and then the face is forced down. In favour of this view, is the fact of the frequent occurrence of face presentations, when deformity of the brim of the pelvis exists. Gardieu considers the obliquity to be rather in the fœtus itself. Sometimes they exist as original presentations, as in two cases recorded by Mme. La-Chapelle, where the females died near the full time, but before labour had commenced.

For my own part, I consider all these opinions as partially correct, though it would be difficult by them to account for every case. In general, I believe these presentations to be mere transpositions of the vertex, from the head moving on its transverse axis, and thereby causing the chin to leave the sternum, and first the forehead and then the face coming down. In confirmation of this we have only to allude to those cases where the change has

been observed to take place during labour. I myself have witnessed cases, where, at the commencement of labour, the head could be detected resting on the brim, but as the process advanced the face came down. Rigby mentions having seen cases, "where the presentation was midway between one of the cranium and the face," in which the face ultimately presented. Merriman, on the other hand, observes, "that he has twice known the presentation of the face, converted by the pains alone, into a natural presentation." (*Synopsis*, p. 48.)

Mr Ziegler some time ago, at the Obstetrical Society, mentioned an ingenious way of accounting for face presentations, on the supposition, that the hands of the fœtus, being forced down from the breast against the chin by the action of the uterus, pushed it from the sternum, and occupying the space between them, forced the chin down, and of necessity caused the face to descend. Mr Ziegler stated at the same time, that it was from observing the hands come down immediately after the head in face cases, that he had been led to form this opinion.

Varieties of Face Presentations.—These, like those of the cranium, have been most perplexingly and unnecessarily multiplied. In both it has been too much the custom to describe the varieties which authors *could* make, instead of carefully examining those which really exist in nature; thus forgetting one of the first rules of the illustrious Bacon—"*neque fingendum aut excogitandum sed inveniendum quid natura faciat aut ferat.*" Systematic authors, Baudelocque, Burns, Campbell, &c., enumerate six varieties, viz. with the chin to either *acetabulum*, either *sacro-iliac symphysis*, *pubes*, or *sacrum*. Some contrive to make even more. Nægelè, and Mme. La-Chapelle, two greater names than whom, either for extent of experience, or carefulness of observation, scarcely can be found, limit these varieties to two.

This division has the advantage both of simplicity, and of comprising all the real varieties to be met with in practice. If, as we have just stated, face cases are transpositions, inversions, as it were, of the vertex, surely we ought not to have more varieties of the face than of the head itself. True it is, that, strictly speaking, we have four different positions of the cranium; but as Rigby has very ably shown in his late publication, these may all be included under two. The simplicity of this arrangement is peculiarly advantageous in face presentations, because it does away with the perplexity and confusion which the multiplicity of varieties under the old method always occasioned.

The first position of the face is where the forehead is to the left acetabulum, and the chin is to the right sacro-iliac symphysis,—is where the chin is to the *right ileum;* this corresponds to the first and fourth positions of the vertex; the *right cheek* forms the presenting part, and as in cranial presentations the caput suc-

cedaneum is situated on the right parietal bone, so here it is on the right cheek.

The second position is where the chin is to the *left ileum;* this corresponds to the second and third positions of the vertex; the left cheek forms the presenting part, and on it the swelling is situated.[1]

The relative position of these two varieties is stated as follows:—

	First variety.	Second variety.
Madame Boivin . .	41	31
La Chapelle . . .	58	45
Nægelè	14	8

Mechanism.—In the first position, the face enters the pelvic cavity, with the chin towards the right ileum, the right cheek being lowest down, and forming the presenting part. As it descends, the chin glides forward till it arrives at the pubes, while the head, in the same proportion, moves into the hollow of the sacrum. The expulsive power continuing, the chin emerges from beneath the pubic arch, followed by the head, sweeping and distending the perineum enormously.

In the second position, the face descends in a similar manner; and the chin, as in the former, is placed under the pubic arch. The left cheek forms the presenting part, and the chin, instead of moving from right to left, as in the first position, passes in this from left to right.

Another explanation has been given, viz., that the forehead arrives at the pubic arch, but, being too broad to pass under, is forced up behind the symphysis pubis, while the chin at the same time traverses the perineum. But this evidently is impossible when the child is of the natural size, for to allow the head to pass in this way, would require a neck of at least eight inches in length.

According to Smellie, Ryan, &c., occasionally the face comes in apposition with the coccyx, the long diameter of the face being in the antero-posterior diameter of the pelvis; but this cannot take place unless the fœtus be immature, because, in the course of delivery, the head and breast of the child would be engaged in the antero-posterior diameter of the pelvis at the same time.

From the account of the mechanism which has just been given,

[1] In formerly lecturing, I used to describe these two positions thus:—*First,* With the forehead to the left acetabulum, and the chin to the right sacro-iliac symphysis. *Second,* With the forehead to the right acetabulum, and the chin to the left sacro-iliac symphysis. But as the face does not always observe the exact obliquity here described, and as the above is much more simple, and for all practical purposes sufficient, I prefer it.

we see there exists evidently a close analogy between face presentations and those of the cranium. The great difference between them is, in the latter, the head forms a cone, passing with the apex first; whereas in the former, the base of the cone passes first, and perhaps there is also a slight increase in the size of the tumour. But it is not so much any increase of size that we are to look to, as the incompressible nature of the bones of the face, and, consequently, the impossibility of their being moulded or adapted, as it were, to the passages, in the way the head can. Burns, although an advocate for interference in these presentations, after giving the minute measurements of the face, makes the following statements:—"On comparing these dimensions with the capacity of the pelvis, we see that there is space for the head to pass, though not so easily as when it presents naturally." (*Midwifery*, p. 431.)

If, then, what has just been stated in regard to the nature of face presentations, and their mode of transmission through the pelvis, be correct,—and Nægelè says, that during an extensive practice of twenty years, he has never seen a case where the face took any other direction than the one just described—the conclusion forces itself upon us, that unless some unusual disproportion or deformity exists, nature should be able to accomplish delivery without the aid of art.

Treatment.—1. *Rectifying the position.* "By raising the forehead, and turning the vertex obliquely down, and directing it to the left acetabulum." (Burns, op. cit. p. 432.) Several of our leading authors have, with Burns, under some restrictions, recommended this mode of treatment; and we feel convinced that it too often is had recourse to in the present day, with any but advantageous results. Ramsbotham, in reference to it, says, "that it is impossible, by any counter-pressure, to make a beneficial change in the situation of the head under a face presentation."

Any one reflecting on the size of the head, which, in its occipito-mental diameter is five inches, and the manner in which it is placed in these cases, must see at once, that it is physically impossible to turn the head in this axis through the cavity of the pelvis, which is only four inches and a half, so as to make the chin approach the sternum, and allow the vertex to come down.

Therefore, I have no hesitation in saying, that not only can no good be obtained by attempting this change of position, but that there is a risk of doing positive harm by interfering with the mode of delivery which nature, as we have already pointed out, takes in those cases.

2. *Turning.*—This mode of treatment is the oldest, but, as we took occasion to mention, is still recommended by some of the most recent authorities in the present day, men whose opinions,

from the position they occupy, unfortunately in the present instance, must have considerable weight with the profession.

The objections which we have to offer to turning are:—

1. That it subjects the woman to considerable risk.

2. That more children are lost in footling cases, whether original presentations, or made so by turning, than in face presentations when left to nature.

3. That the operation is unnecessary and uncalled for, because nature, without the assistance of art, can accomplish delivery.

That the operation of turning subjects the *woman* to considerable risk scarcely any one can doubt. By referring to the published reports of different hospitals, or the valuable statistical data collected by Churchill, we find that turning proves fatal to the female in the proportion of about 1 out of every 15, where it is had recourse to. Some have objected, that it is unfair to take *all* the cases where this operation is required, some of which, placenta prævia, for example, from their nature alone subject the woman to considerable risk, and compare them with face presentations, where no such danger exists. But these cases are so few, as scarcely to influence the calculation, when taken from all cases on a large scale like the present.

Others, again, have brought forward individual cases where they have turned successfully in face cases,—I myself can do the same. The second case of midwifery which I attended after settling in country practice, was a face presentation, where I turned successfully, both as regarded mother and child. But, on the other hand, I know of cases where every precaution was taken, where the operation was performed with all the skill and dexterity which ample opportunity and experience could give, where both mother and child have been lost.

"Are we then justified," to use the words of a late able reviewer, "in subjecting any woman to even a fraction of this danger in rectifying or attempting to rectify a presentation, any supposed difficulties connected with which, nature every day shows to us, she can easily overcome without the assistance of art."

The second objection seems equally well founded. In original footling cases, it is calculated that 1 in every 4 children is lost from pressure on the cord and other causes, which we need not allude to here; while in the operation of turning, Churchill has shown, by taking the results of no less than 542 cases, that the mortality to children thus brought into the world is 1 in 3. Contrast this with the mortality to children in face presentations, where no interference takes place. This is well seen in the following table:—

Authors.	No. of Face Cases.	No. of Children Lost.
Boer, ...	80	4
Chevreuil, ...	18	3
Collins, ...	43	4
Total, ...	131	11

This gives a mortality of 11 in 131; but if we deduct one of Collins' cases, which was an (anencephalous) monster, it makes only a loss of 10 children, or 1 in 13.[1]

But the last is the strongest objection of all, viz. that the operation is unnecessary and uncalled for. When speaking of the mechanism of face presentations, I endeavoured to show that there existed such an adaptation between the dimensions of the face and the capacity of the pelvis through which it had to pass, as to leave little room for doubt as to the capability of the one being able to be transmitted through the other by the natural efforts alone. But this doubt, if any did exist, is proved, beyond the reach of any fallacy to which the rule or compass, however carefully applied, is liable, by experience on living nature, taken, not merely from the observation of one individual, but of several, who, from their situation as physicians to large hospitals, must have had every means of verifying or refuting this important fact. The mass of evidence is now so great—amounting to no less than 412 cases, and many more might be added—as, I trust, for ever to decide this question, and to establish as a law in practical midwifery, that in all ordinary face presentations, nature is capable of accomplishing delivery. The evidence I now bring forward in a tabular form.

Authors.	Hospital, &c.	No. of Face Cases which terminated without assistance.	Reference.
Zeller.	Vienna.	43	Observat. sur differens objets relatifs à l'Art des Accouchemens, &c. Vienna, 1789.
Boer.	Do.	80	Boer, Natürliches Geburtshülfe, erstes buch, p. 137.
Chevreuil.	Maternité Hospital, Angers.	18	Manuel d'Accouch. p. 84, 1826.
Collins.	Dublin.	33	Practical Treatise, p. 33.
Velpeau.	Paris.	6	Traité de l'Art des Accouch. vol. i. p. 526.
Bang.	Copenhagen.	10	Soc. Méd. de Copenhagen, &c. 1818.
Pacoud.	Bourg.	100	Maternité de Bourg. &c. Fevrier 1833.
Kilian.	Prague.	122	Bulletin de Ferussac, tom. xxv. p. 352.
		412	

[1] This might be made even lower, because Chevreuil mentions, that in his three fatal cases, death was *supposed to have taken place* before delivery.

But though we have taken some pains to prove, that in face presentations, it is not necessary either to change the position of the head, or to turn the child, in order to accomplish delivery, yet there are several points, which render their treatment different from ordinary cranial presentations. As we have already stated, the head in face cases occupies a less favourable position for transmission, than in ordinary presentations, and from the nature of the bones of the face, they can neither overlap each other, nor adapt themselves with the same facility to the passages that the head did, it is obvious that we require to take every precaution to ensure complete relaxation of the passages, and carefully to avoid every thing at all calculated to retard uterine action. These indications are best fulfilled:

1. By bleeding, provided there exists no contra-indication, on the part of the patient, to prevent it. In first labours, where there usually exists more rigidity of the passages than subsequently, this remedy is particularly called for.

2. The membranes should be preserved entire as long as possible. By so doing, we secure more complete dilatation of the parts, and prevent many of the injurious effects of pressure, both on the mother and the child.

3. The bladder and rectum should be emptied. The former viscus requires to be carefully watched, because, from the pressure of the chin on the urethra, retention of urine is very liable to take place.

4. A frequent cause of protraction, is the descent of a portion of the os and cervix uteri, which, becoming wedged between the head and the pelvis, is productive of serious inconvenience, to say nothing of pain and danger to the patient. This, as Hamilton pointed out in other cases, may be readily overcome, by carefully and gently supporting the os uteri during each pain, till the presenting portion descends, and the protruded portion recedes.

A caution should also be added to support the perineum carefully, because, from the enormous distension to which it is subjected, it is much more liable to be lacerated than in ordinary cases.

A common impression in face presentations, is, that the delivery necessarily must be tedious and of long duration. This, however, is incorrect. In the Dublin Hospital five cases terminated within an hour; eight during the second hour; and fourteen between the third and the sixth hour. In Guy's Hospital practice, thirteen terminated within twelve hours; nine within eighteen hours; and of the remaining two, one lasted twenty-one hours, and the other twenty-nine.

But in face cases, difficulties and delay may arise in the same way, and from the same causes, as in cranial presentations. Here the same principles must regulate the treatment, whether

nature can any longer be trusted, or recourse should be had to instrumental assistance.

With regard to the kind of instrument, most authors prefer the lever to the forceps, and they recommend it to be passed into the hollow of the sacrum over the occiput, as a tractor, in order to make the occiput descend. Considering how completely the hollow of the sacrum is filled by the cranial tumour in these cases, and the difficulty there is of introducing any instrument in this direction, coupled with the fact, that it is not the occiput but the chin which ought first to descend, I would humbly suggest, that in most cases the forceps will be found the best instrument. But whichever instrument we prefer, the great point is to remember the mechanism of these cases, and in the course of the delivery, ever to make the head descend in the direction which nature herself has pointed out. By forgetting this, or bringing the head down in a different manner, delivery by the forceps or lever becomes impracticable, and then the only resource left is to terminate labour by the perforator.

PART SECOND.

REVIEWS.

1. *Traité des Névralgies, ou Affections Douloureuses des Nerfs. Par* F. L. S. VALLEIX, *Médecin du Bureau Central des Hôpitaux de Paris, &c.* 8vo. pp. 716. Paris, 1841.
   (A Treatise on Neuralgia, or Painful Affections of the Nerves.)
2. *Tic Douloureux, Neuralgia Facialis, and other Nervous Affections; their seat, nature, and cause: with Cases illustrating successful methods of Treatment. By* R. H. ALLNATT, M.D., A.M. 12mo. pp. 184. London, John Churchill, 1841.
3. *Du Traitment de la Sciatique et de quelques Névralgies, par l'Huile de Térébenthine. Par* L. MARTINET. Deuxieme édition, revue et augmentée. 8vo. pp. 188. Paris, 1829.
   (On the Treatment of Sciatica, and some other forms of Neuralgia, by the Oil of Turpentine.)

THE work of M. Valleix is obviously the result of much personal observation, and careful study of the best authories; but, like many works from the pens of French physicians, the practical part is the least complete. Viewing the treatise, however, as a whole, it is deserving of great praise, and must be regarded as an important addition to medical literature. The subject discussed by Dr Allnatt is of far more limited extent, and bears fewer indications of experience and careful elaboration, yet it is nevertheless an interesting and practical little volume.

Neuralgia, in the common acceptation of the term, means pain in a nerve or nerves; and it is in this general sense that most authors employ the term; but M. Valleix excludes from the neuralgiæ all painful affections of internal organs, and those anomalous symptomatic nervous pains depending upon functional disorder of the viscera. In a practical treatise, it may be judicious to draw this distinction, as it tends to give clearer views as to the diagnosis, prognosis, and treatment of the individual cases with which we have to deal. Pain on pressure over the affected nerve, M. Valleix believes to be a constant symptom in neuralgia, an opinion from which many authors and practitioners dissent. His descriptions of the different forms of neuralgia, and the way in which their diagnosis is to be made

out, are minute and clear, and deserve the attention of practitioners.

In the treatment of neuralgic affections, M. Valleix must have met with more success than generally falls to the lot of other practitioners; for he states that three-fourths of the cases to be met with, admit of complete cure. This is the more remarkable, as he does not even notice the treatment by purgatives, now so often attended with success in this country, nor does he once speak of croton oil, which has been so prominently brought before the profession by Sir Charles Bell, as one of the most valuable therapeutic agents in neuralgia, an opinion which the experience of many tends every day to confirm. Croton oil is not that sovereign specific which some, elated by the success which has attended their employment of it, would have us to believe; but it is of infinitely greater value than many of the remedies enumerated by M. Valleix. Sir Charles Bell makes the following remarks on this subject:—"I do not offer the croton oil as a specific in this complaint; but its effects have been so remarkable as to afford a ground of argument. I ordered it at first in desperate circumstances, in the most severe case of pain in the cheek; and the effect being immediate, the relief perfect and permanent, I should have been to blame had I not followed the practice in similar cases. In very many, it had the same happy result. What then, may I ask, would be the conclusion of any inquiring mind when he found a peculiar purgative acting powerfully, but not more powerfully than other forms previously given, attended with immediate and permanent relief of symptoms? Mine, I confess, was, that it acted directly on that portion of the canal, the irritation of which, or, as Mr Abernethy would have said, 'the discontented state of which' produced the remote pain. I have referred to a patient who had been subject to tic douloureux, and who had been more than once cured of his pain by croton oil, having died last autumn. There was no disease in the nerve, but ulceration was found in the mucous coat of the ileum. But then it is said in the report conveyed to me, that he had been too powerfully dosed with this medicine. In this last supposition, we have the important admission that croton oil, improperly used, will act on a portion of the mucous coat to the formation of an ulcer. Could we depend on this reasoning, it would explain how the better regulated administration of the medicine did, in many cases, affect a portion of the intestine to the removal of morbid irritation there. Reviewing my experience, I am borne out in believing that the disturbed function of particular parts of the intestinal canal gives rise to pains, differing in their apparent places according to the portion of the canal irritated. Here, I conceive, there is a wide field for inquiry. If the intestinal canal is estimated at seven times the

length of the body, and if it be also acknowledged that the different portions of this long tract of mucous membrane, perform distinct offices, and are subject to different influences, there is nothing to repel the idea, that these portions, being in a state of disturbance and irritation, shall produce a variety of symptoms, especially differing in their apparent locality. And this view is countenanced by the effect of medicine. We can throw the influence of evacuants on the different portions of the canal, affect the stomach, the duodenum, the long intestine, the colon, or the rectum. Thus is each portion of the intestine proved to be distinct in office, and to possess distinct affinities. It is on this principle that we ought to pursue the inquiry,—*first*, on what part of the extended canal does this secret disturbance fall; and *secondly*, what form or combination of medicine shall especially touch or influence the part affected? We have an instance in the effect of the croton oil. Let us not call it a specific, but seek for other remedies on a just and scientific principle." (*Practical Essays.* Edin. 1841, pp. 101—104.)

Charles Bell, then, believes, that the cause of tic exists primarily in the intestinal canal, and only remotely in the fifth pair of nerves. This is also the view of Dr Allnatt, upon which the the treatment he recommends is based. With his remarks on this subject we are not much inclined to find fault; because the great doctrine which he advocates is a sound one. But it would have been better to have enunciated his opinions with less of dogmatism; for, assuredly, sooner or later, he will meet with many cases of tic, and of other forms of neuralgia, which will obstinately resist all the resources of his therapeutic armoury. We know of not a few cases, in our own practice and that of others, which, instead of being radically cured, have derived but very transient benefit from the treatment which he advocates as infallible. Such unguarded statements as those of Dr Allnatt, when left uncontradicted, greatly retard the science of therapeutics, by producing scepticism in the efficacy of all drugs in the mind of the young and sanguine practitioner, and thereby making him, if possessed of an imaginative mind, an easy convert to homœopathy, or some other of the medical heresies most in vogue, and which, in quick succession, seem to arise one after another in Germany—that land of dreamy and wild speculations in religion, and of pretty, but unstable hypotheses in medicine.—Without farther comment, we extract the passage which has suggested these remarks.

"Keeping in view," says Dr Allnatt, "the principles I have endeavoured to inculcate in the preceding pages, the indications to be attended to in the treatment of tic douloureux, are—to relieve the irritation of the abdominal viscera, and, in cases of long standing, the consequent hyperæmia which may have been induced. For this purpose, I have found the free use of aperients

of unfailing efficacy, and I give a decided preference over all others to a pill combining a small quantity of croton oil with stomachic aperients. In plethoric habits, and when the constitution has not materially suffered by protracted agony, the aperient plan should be steadily preserved in, and carried to its full extent; that is, the patient may be kept under the influence of purgatives until the pain has subsided. The diet, which of course must be carefully regulated, should consist of light and nutritious food; all indigestible aliment should be avoided, and irritating spiritous and fermented liquids absolutely prohibited. Exercise in the open air is particularly desirable, as it tends to the 'equalization of the circulation;' not, however, that exercise which consists in the luxurious rolling of a carriage, but brisk walking on foot until a glow is excited, or, what is still more desirable, horse exercise. By these means and these alone, I have succeeded in curing inveterate cases of tic douloureux, in the course of six or eight days, which had withstood for months and years every other method of treatment.

"But, suppose a weak and delicate female, with anemia, to be the subject of tic douloureux, in whom the periodical functions of the uterus are irregularly performed, or in whom the disorder is complicated with hysteria or other affections connected with an irritable and mobile state of the system—in this case, purgatives must be resorted to with great caution, and in very small and divided doses; still they must be used, and alternated, as occasion may require, with ammonia, steel, the vegetable bitters, sedatives, &c. It is in these instances that quinine and the sesqui-oxide of iron produced such marked and decided relief.

"The question has been frequently asked, 'Can tic douloureux be permanently cured?' In contravention of the authority of our great names, I answer,—Yes! as permanently and effectually as any other disorder to which the human body is subject. I would in return ask of those who doubt this fact, if hysteria can be cured, continued fever, phrenitis, chronic hepatitis, spasms, convulsions, or any other disease or affection which may occur to the imagination at the moment? It is true it will be said, that we may, by appropriate remedies, cure any of these disorders; but can we ensure the patient immunity from future attacks to the end of his life! The same exciting cause, *caeteris paribus*, operating upon a frame peculiarly liable to a particular form of disorder, in other words operating upon the idosyncracy of an individual, may undoubtedly, at any future period produce the symptoms it has before occasioned; but this I maintain, without fear of contradiction, that by striking at the root of the evil, and not wasting opportunity in temporizing with inert and worse than useless topical applications, tic douloureux is an affection, which yields, I had almost said, with peculiar rapidity." Pp. 86—89.

The monograph of M. Martinet is very interesting, and, along with the testimony of Romberg and others, establishes a high reputation for turpentine in the treatment of sciatica and certain other forms of neuralgia. It consists chiefly of cases, in which the remedy was used, arranged in three classes; viz. cases cured, cases relieved, and cases in which there was no benefit produced; and a good analysis of them is given at the end of the work. As M. Martinet's work is inaccessible to most of our readers, we have translated some of the more important passages for their perusal. We find the following remarks upon the *modus operandi* of the substance.

"The essential oil of turpentine presents great differences in its mode of action, according to the dose in which it is employed. It also gives rise to certain peculiar phenomena, when administered in sciatica, crural and bra-

chial neuralgia; and these phenomena, as we shall have to remark by and bye, are only observable in the affected member. Scruple doses, given in a convenient form, are speedily followed by these effects. In the majority of cases, the back part of the mouth, and the upper part of the œsophagus become the seat of a lively heat which is rapidly communicated to the other portions of the intestinal canal. At the end of a quarter, or at most of half an hour, this heat spreads over the loins, and the whole extent of the affected limbs, especially in the course of the painful nerves. In some individuals, a general sweating is produced, and in such cases the transpiration from the affected limb is not always greater than that from the opposite limb. The other phenomena observed from such a dose of the oil of turpentine as that above mentioned, are want of appetite, belching, a feeling of weight in the stomach, difficult digestion, diarrhœa, and, rarely, an itching over the whole body. There is sometimes an increase in the secretion of urine, which, when this is the case, acquires a violet odour; and, last of all, there is dysuria, accompanied with more or less heat: but these last mentioned effects are far from being constant, and, even when they do occur, continue at most only for a few days."

"The stimulant action of the oil is increased in proportion to the dose. Taken in a dose of from two drachms to an ounce, it produces nausea, vomiting, intestinal heat, tenesmus, and, in certain cases, slight gastro-enteritis, accompanied by fever. The urinary passages generally participate in the stimulating effect produced upon the intestinal tube, and there are symptoms of irritation of the kidneys, more or less acute. Frequently, a feeling of heat and pain passes along the ureters, to the bladder and urethra, and along with these symptoms, there is generally dysuria, or even strangury. In some subjects, we also see mucous discharges following the inconsiderate administration of this substance: but it must be remarked, that such untoward occurrences never happen in consequence of its use in moderate doses; and that they have only been observed in cases of epilepsy, tænia, and other severe and rebellious affections, requiring a dose of one or two ounces without any vehicle. It has several times happened in my own practice that patients have taken two drachms at once, without experiencing more than some colicy pains, vomiting, burning sensation in the stomach, looseness in the bowels, and, in rare instances, strangury; but all these symptoms of irritation were slight, and so transient as to require no treatment; indeed, generally it was sufficient to suspend the use of the linctus to see them disappear in three or four days."

The brain, in consequence of its sympathetic connexions with the stomach, sometimes experiences certain derangements during the use of this oil, which I have observed particularly in women, and nervous and irritable patients, viz. vertigo, a state of intoxication approaching to delirium, headache, more or less intense, accompanied with redness of the face, and which, as well as the other phenomena of which we are speaking, seem to depend in a great measure upon the strong and penetrating odour of this volatile oil." Pp. 45—48.

M. Martinet attaches great importance to the form of administration. He says:—

"It has been demonstrated to me by a great number of facts, that it is necessary to prescribe the oil of turpentine in a convenient form, to insure all the chances of success offered by this precious drug. On this account, its direct contact with the mucous membrane of the alimentary canal must be guarded against, so as to avoid the various unpleasant effects that might therefrom arise. With this end in view, the patient ought to be directed to take, half an hour after the turpentine, a soothing drink, or aromatic infusion. Honey, gum-arabic in powder, or calcined magnesia, are the substances most fit to be administered in conjunction with it; and although in the greater number of cases detailed in this memoir honey was used, I would nevertheless ob-

serve, that this mixture, alike disgusting and disagreeable, is so repugnant to some patients, that they cannot swallow it. To avoid this inconvenience, and prevent the vomiting which sometimes ensues, I now mask the acrid taste of the turpentine by an aromatic syrup, by an inert powder, or, better still, by calcined magnesia, a plan which has of late been followed with the balsam of copaiba. The following is one of the methods of preparation which has appeared to me most convenient. I composed the formula in 1822, along with M. Caventou, one of the most distinguished chemists of our time.

Take the white of one egg.
— Essence of turpentine. ʒ iij.
— Syrup of peppermint. ʒ ij.
— Syrup of orange flowers. ää.

To be made into a linctus, of which three table-spoonfuls are to be taken per day.

It is sometimes necessary to add to this potion a certain quantity of laudanum, particularly when the stomach cannot support the presence of the turpentine. In this way vomiting may be prevented." Pp. 76—78.

The cases in which turpentine is indicated are thus described by M. Martinet:—

"It is chiefly in sciatic and crural neuralgia, that this medicine is most likely to succeed; but it may also be had recourse to with advantage in neuralgia affecting the superior and inferior extremities, and the face, of which I have given cases. The oil of turpentine is always indicated when the neuralgia does not depend upon an organic alteration, nor on a constitutional principle seated in the sciatic nerve, such as the virus of syphilis, which must be expelled by mercurial treatment. The chances of success are greatest when all the characters proper to neuralgia exist, such as acute pain, a tracing by it of the course of the nerves, and violent and quickly succeeding paroxysms; and this remark is applicable, be the disease chronic or acute, and whatever means have failed. Blessed be the medicine which can be regarded as an anchor of safety, when all the resources of art have been exhausted, and when the future seems to have nothing in store for the patient, but long and cruel suffering, or the thought more painful still, that he is labouring under an incurable malady!" Pp. 88, 89.

M. Martinet says, that in most instances he has accomplished either a complete cure, or a remarkable abatement of the symptoms, within a week, (p. 90); and in another place he remarks, "twelve days suffice, in the majority of cases, for the cure of neuralgia of the limbs; and commonly four or six are enough," (p. 185.) Where some pain still remains, baths, frictions, and blisters to the part affected, are recommended, especially to the most superficial part of the nerve implicated. In this way a cure, otherwise imperfectly obtained by the turpentine, may be completed; as was the case in two instances related by Dr F. Home of Edinburgh, which M. Martinet quotes from the "*Medical Facts and Experiments*" of that author.[1]

The following analysis of M. Martinet's cases we quote from his *Memoir*:—

"In 70 patients, most of them affected with sciatica, and other neuralgiæ of the limbs, 58 were cured: viz. 3 by frictions, and all the rest by the in-

[1] 8vo, London, 1759.

ternal administration of the oil of turpentine; 10 (two of whom gave up the treatment too soon) only experienced temporary relief; and in 5 cases there was no amendment whatever. Two of the last-mentioned cases had a disease of the joint under which they sank two months afterwards; of these 71 neuralgiæ, (for one of the patients had 2), 40 were acute, and 31 chronic; of the 40 acute cases, 34 were cured, 5 were relieved, and 1 only remained uneffected; of the 31 chronic cases, 24 were cured, 3 relieved, and 4 derived no benefit; of the 71 neuralgiæ, 33 had previously resisted different treatment, and of these, 25 were completely cured, 4 relieved, and 4 others remained in the same state as before; of 58 cases completely cured, 34 were so in less than 6 days, 22 in less than 12 days, and 3 in from 25 to 45 days. Of these 58 cases, 48 were sciatica, 2 of which were treated by frictions: 3 were crural, 4 brachial, and 3 facial neuralgia. Of 10 cases which were only relieved, (and all of which were cases of sciatica), there were 2 in which the treatment was suspended on the second day. Finally, of the 5 cases in which the oil of turpentine completely failed, there were 4 of sciatica, and 1 of crural neuralgia. Two of these patients died of *morbus coxarius*. In 21 of the patients there was heat produced in the course of the nerve, and along the affected limb. The 2 others, having suspended the treatment, were only relieved. In 18 heat was observed in the alimentary canal, but especially in the stomach. Three were seized with vomiting, and in 2 this was occasioned by far too strong a dose, viz. 2 drachms *(deux gros)* at once. Three had diarrhœa and painful colic: and 1 had phlyctenæ in the mouth. In 5 the quantity of urine was increased; 4 complained of dysuria or strangury, two of whom had taken the turpentine in too large a dose. In 10, general sweating was observed; in 2 instances alone the perspiration was confined to the painful limb. Lastly, one woman was, as it were, made drunk by the oil of turpentine, and two others experienced itching all over the body." Pp. 185—189.

In the works of Valleix and Allnatt, we find no investigation of the affinity existing, especially in marshy districts, between agues and neuralgia, nor on the influence of anti-periodic remedies upon the latter. Many of the marked agues called *inflammatory*, might, with more correctness, be termed *neuralgic*. Periodicity in neuralgic affections is much more common than many suppose. Tic douloureux, sciatica, toothache, &c., and what are termed nervous headaches, if closely observed, will generally be found to assume the intermittent form, as has been clearly established by the researches of Strack,[1] M'Culloch,[2] and others. The fifth pair of nerves is that most commonly affected with well-marked periodic neuralgia; and the different stages of the paroxysm are often very obvious. The attack commences with chilling of the surface, then follow neuralgic pains in the forehead and face, flushing, suffusion of the eyes, and watery discharge from the nostrils. When these symptoms have continued for about four, six, or eight hours, they almost entirely disappear, and the skin becomes moist. The types most commonly met with, are the quotidian and double tertian. This form of neuralgia occurs most commonly in marshy districts, while agues

[1] Strack de Febre, continuâ remittente, 8vo. Franc. et Mogunt. 1789.

[2] M'Culloch (John, M.D.) on Remittent and Intermittent Diseases. 2 vols. 8vo. London, 1828.

prevail and abound most in spring, and during easterly winds. In this form of the disease, anti-periodic remedies prove of signal advantage. It is not only, however, when the intermittent or remittent character of the disease is thus clearly manifested, that these medicines are useful. We have seen the most satisfactory cures accomplished by the employment of Fowler's arsenical solution, and the sulphate of quinine, in cases not occurring in ague districts, and where it was difficult to trace periodicity. We strongly advise a trial of these medicines in all cases where the patient has been subjected to malaria. It is in this class of cases, also, that the sub-carbonate of iron is most likely to prove serviceable, though in many others it will accomplish a cure. The late Mr Hutchinson of Southwell, who first introduced this substance to the profession as a remedy in tic douloureux, used to give it in doses of from one drachm to one drachm and a half.[1] Dr Elliotson has found that it may safely be given in larger quantities;[2] but we do not think he has made out any superior therapeutic efficacy in his large doses, and would recommend practitioners, as to the dose, rather to follow the advice of Dr Hutchinson, who never found it necessary to give more than ninety grains in the twenty-four hours. From twenty to thirty-five grains three times a day, is, we think, the proper dose.

It would be tedious to do more than enumerate the other plans of treatment recommended in neuralgia. M. Valleix lauds as adjuvants the use of *small blisters applied over the painful points in the course of the affected nerve*, and by their use alone he has in many instances accomplished cures. M. Jobert speaks favourably of the *actual cautery*. *Division of the nerve* was practised so long ago as the time of Galen, and is mentioned by him. This cruel and useless operation has been a good deal in vogue in more recent times, and especially on the continent. A temporary cure is all that has ever been attained, even when a portion of the nerve was cut out. "In an instance," says Mr John Pearson, "when the painful affection was referred to one finger, the patient was *relieved* by the amputation of the part; but a similar disease soon attacked one of the fingers of the other hand:" and a few lines farther on, he adds, "I never saw any real benefit derived from the division of a branch of a nerve, in either the upper or lower extremities, unless in those cases where the agency of a mechanical cause, or some well-defined change of structure existed." *Med.-Chirurg. Trans.*, vol. viii. p. 270. In a case related by Mr Denmark, of wound of the radial nerve, with symptoms resembling tic, the arm was amputated, and a cure accomplished."[3]

[1] Hutchinson (Benjamin), Cases of Neuralgia Spasmodica, or Tic Douloureux, successfully treated. 8vo. London, 1822.

[2] On the Subcarbonate of Iron. Med.-Chirurg. Transactions, vol. xiii. p. 232.

[3] The particulars of the dissection of the arm, we subjoin. "I traced the radial nerve through the wounded parts. It seemed to be blended with, and intimately

Poultices made with creasote, creasote taken internally, tar plasters,[1] *and belladonna* as an external application, are useful, both as palliatives and adjuvants. *Aconite, acupuncture,* and *electricity,* we have only space to name. *Anodynes* are allowable; but large doses of *narcotics* should be avoided. *The pills of Méglin* for a time enjoyed a great celebrity; and M. Valleix seems to have no small faith in them. Each pill contains a grain of oxide of zinc, and a grain of henbane. Mr Robarts' paper on the *extract of cinchona,* in our December Number, is valuable.

We have now given some idea of the works placed at the head of this article, and attempted to sketch the most successful methods of treating neuralgia. We have shown that some remedies possess a wonderful control over this dreadful malady, but that there are none which may not fail in the hands of even the most skilful.

Principles of General and Comparative Physiology. By W. B. CARPENTER, M.D. Edin., *Lecturer in the Bristol Medical School.* Second edition, 8vo, pp. 577. London, 1841.

We gladly embrace the opportunity of the publication of a second edition of Dr Carpenter's work, to bring it before the notice of our readers, the more especially as its plan and execution are conformable to those which we have maintained ought to be followed in every physiological treatise, and for which we have already lifted up our testimony.[2] As long as physiologists confine their attention to an examination of the structures and vital actions of man, so long will their doctrines be imperfect, inadequate, and fluctuating. There can be no doubt, that, notwithstanding the apparently endless dissimilarity observed in the external appearance and actions of the thousands of organic forms belonging to the vegetable and animal kingdoms, there is such a unity of structure and a unity of function pervading them all, that undoubtedly the organization of all living bodies is re-

attached to them, for the space of an inch, no doubt, the effect of previous inflammation. It had been wounded; and, at the place of the injury, was thickened to twice its natural diameter, and seemed as if contracted in its length. This contraction, I thought, partly accounted for the bent position of the arm, and the increased pain on attempting its extension; but, on farther examination, I was surprised to find, on dividing the fibres on the posterior part of the wounded nerve, that there was a small portion of the ball firmly imbedded in it, which had been driven off by grazing the bone. The presence of a solid extraneous body, with an unequal rugged surface, thus lodged in the centre of a nerve of such magnitude as the radial, will be readily admitted as sufficient to account for the thickened state of the neurilema," &c.—*Mr Denmark, in Med.-Chirurg. Trans.,* vol. iv. p. 51.

[1] This is a favourite remedy for tic among sailors.

[2] *Vide* Review of Works on Comparative Anatomy, vol. for 1841, p. 354.

gulated by the same laws; and it is obviously incumbent upon every one who endeavours to ascertain these laws, to study their operation in the more simple as well as in the more complex organisms. How can a physiologist know whether his generalizations include all the facts of the case, or, in other words, be correct, if he restricts his investigations to so limited a field as the organism of man alone? Besides, as Cuvier remarks, we frequently find in the lower animals the more complex organs of man and the higher animals analysed to our hands by nature herself; and we are thus often enabled to ascertain what parts of an organ are essential, and what parts are merely accidental or superadded. We believe that many of the present erroneous physiological and pathological doctrines, to which some of our most talented writers so pertinaciously cling, can be clearly traced to this limited survey of the phenomena of organized bodies against which we are contending. We are strongly of opinion that general physiology will, in a few years, assume a new aspect. As the classification of the animal kingdom, or zoology, is already in a great measure, and will ultimately be entirely, founded upon their internal organization and functions, and as the general laws, which are gradually rising out of our rapidly accumulating information on these subjects, must be of great general interest, and will admit of important application to other branches of knowledge besides that of practical medicine, we are fully impressed with the belief that physiology, like chemistry, though at its origin a mere appendage and subsidiary to practical medicine, yet, by its own inherent qualities, will shortly assert its own independence to be considered a distinct science, and will continue to be linked with medicine only in the character of an indispensable and potent ally. When this time arrives, physiology shall continue, as it has done, to put more powerful means in our hands for detecting and curing diseases. Indeed, we anticipate that some of the greatest discoveries in practical medicine must come from this source. Until we have ascertained the laws which regulate the natural molecular movements by which nutrition and secretion are effected, how can we ever expect to ascertain the deviations from those laws by which the various morbid growths which we term *tubercle*, *tumours*, &c., are deposited. And where is a knowledge of those laws to be sought with more chance of success than in the lower organized animals and in plants, where the investigation is not embarrassed by the intervention of the action of other functions, as in the higher animals? Entertaining, as we do, a strong conviction of the truth and importance of these our views upon the just nature and aim of physiological investigation, we must conscientiously and earnestly recommend all those who wish to obtain clear, extended, and comprehensive ideas upon the great *science of life*, to take advantage of Dr Carpenter's la-

bours, for there is no single work in the English language which we can in these respects compare to it. Since the first edition of this work was published, various important additions have been made to physiology, more especially in the anatomy of tissues, and in the process of organization in plants and animals. An excellent summary of all the new facts and observations, interspersed with some judicious remarks by the author, has been incorporated in this new edition, so that several pages of it have been entirely re-written. We are glad to see that the author has much extended his chapter on the special and comparative physiology of reproduction, more especially that which refers to animals, and has advanced some original and ingenious views on the analogies which exist between the processes of reproduction in different organized bodies, of which we have already published a summary, furnished us by the author, (MONTHLY JOURNAL for 1841, p. 655).

This work is divided into three great divisions. The first consists of an extended introductory portion of 141 pages, containing a description of the primary tissues of plants and animals, and a general account of the organisms of the different classes and principal orders of plants and animals, and the analogies and affinities which exist among them. The next great division of the work is devoted to general physiology, and includes four very important objects of investigation, which we have read with much interest. 1. On the nature and causes of vital actions. 2. On vital stimuli. 3. On the laws of organic development. 4. General view of the functions. The third great division of the work embraces the details of special and general physiology, in which all the functions of organised bodies are examined individually.

In a work such as this, containing innumerable details of facts, it is impossible to expect that we can agree with the author on every point. We have marked out a few passages where we differ in opinion; but as these do not involve any question of importance, we shall here refer to only one of them. In the chapter on interstitial absorption, (p. 301,) it is stated that "it may be doubted to what extent these phenomena (of interstitial absorption) are occasioned by the lymphatics, or how far the veins partake in their production. In bony tissue, lymphatics have never yet been demonstrated; still, however, their existence cannot be altogether denied; but if they are really absent, the process of absorption, which is often very actively performed in the bones, is manifestly due to the veins." Now, we are of opinion, that the author should not have so summarily disposed of the statements of Cruikshank and Soemmerring, who state that they have injected these vessels in the bones. Breschet says, "Il n'est pas permis de douter de l'origine des vaisseaux lymphatiques dans

les os,"[1] and then adds that M. Bonamy has often injected the lymphatics in the interior of the long bones. No doubt Cruveilhier, in his late work on *Anatomie Descriptive*, tom. iii. p. 351, asserts that he has never been able to satisfy himself of the existence of the lymphatic vessels in the nervous tissue, in the muscular fibre, in the glands, in the fibrous, cartilaginous, and osseous tissues, yet we are decidedly of opinion, that we should be exceedingly cautious in attaching much importance to negative evidence, when opposed to the positive results of several competent observers. However that may be, we think our author would have found a better example to illustrate his position, —that interstitial absorption is at least partly due to the veins, in the case of the nervous system; for though it is affirmed by Fechmann and some others, that they have injected lymphatic vessels on the serous membranes covering the central organs of the nervous system, yet we are not aware that any modern anatomist of any authority has succeeded in demonstrating the presence of these vessels in the nervous texture itself. Though we differ in opinion from the author in a few of his details, yet, as we have already mentioned, these are not of any great importance, and are of such a nature, that we cannot in any case positively assert that he has decidedly fallen into error. We have no hesitation, however, in giving our sanction to *all* the *general doctrines* laid down by the author, some of which have been already advocated in this Journal, and have for many years been maintained by Dr Alison, Professor of the Institutes in Edinburgh, in opposition to the generality of the physiologists, both of this country and of the continent. We here more especially allude to the doctrines, that the properties of muscular contractility, of secretion, nutrition, and absorption, are inherent in the tissues in which they are manifested, and are not derived from the nervous system; and that certain movements of the nutritious juices through the tissue can take place independent of the action of the contractile solids, and in virtue of certain attractions and repulsions which go on between the juices and the tissues, and by which nutrition and secretion are effected.

One of Dr Carpenter's mental characteristics, is evidently the extended, clear, and comprehensive view which he takes of any general question which he makes an object of his attention. We again recommend this work to our readers.

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[1] Le Système Lymphatique, p. 40.

Rélation Médicale de Campagnes et Voyages, de 1815 *à* 1840; *suivie, &c. &c.*
(*Medical History of Campaigns and Travels, from* 1815 *to* 1840; *followed by Notices of Fractures of the Lower Extremities, the Physical Constitution of the Arabs, the Surgical Statistics of the General Officers wounded in the field of battle. By the* BARON LARREY, *Member of the Institute of France, &c. &c. &c.*)
With plates. 8vo, pp. 412. Paris, J. B. Baillière, 1841.

The Baron Larrey has studied and practised Surgery under a greater variety of circumstances, than any man now living; and the volume before us is, on this account, diversified, entertaining, and instructive. Among other professional details, we have graphic accounts of many of those formidable wounds, which many of the French marshals and generals sustained during the revolutionary war, and whom Larrey had occasion to dress on the field of battle. It contains also observations on the treatment of fractures by the "*appareil immobile*," and other practical improvements to which he lays claim. With the professional matter, there is mingled a great deal of personal anecdote and adventure, which is greatly enlivened by the characteristic enthusiasm and devotion, which have always actuated this distinguished follower of Napoleon, and which comes forth, in the book now under review, with a peculiar raciness and freshness. He describes his adventure with the Prussian lancers at Waterloo, when he was taken prisoner, and mistaken for the emperor. They seemed quite at a loss what to do with their valuable prize, till it was found out that he was not Napoleon, when their disappointment and indignation ran so high, that he was ordered to be shot; but being fortunately recognised by a Prussian surgeon, he was dealt with more mercifully, and it was decided, that he should be blindfolded, by placing a sticking-plaster over his eyes!

The only other personal detail for which we can make room, is an account of his visit to the good town of Edinburgh. Though it contains some amusing little inaccuracies, attributable in a great measure to an imperfect acquaintance with our language, it will, we feel assured, prove interesting to our readers. It affords an excellent illustration of the good feeling with which the little attentions paid to the illustrious Baron, on his visit to this country, were given and received. The book, indeed, abounds with expressions of overflowing gratitude for the reception which he met from his professional brethren in this country.

"We devoted Sunday, the third day after our arrival in Edinburgh, to visit the schools for the orphans of merchants. The Lord Mayor, the governor, the directors of these schools, and the principal physicians, having learned that we wished to visit these establishments, were desirous to receive us with a certain degree of respect, and in consequence caused to be pre-

pared for us in the boys' school,[1] which is the largest and most beautiful, a splendid repast, where the individuals mentioned, along with some of the other magistrates, met to wait upon us. We were quite unaware of any intention to invite us to this entertainment. The Lord Mayor, in the name of his fellow-townsmen, invited us to this *déjeuner*. At the end of the repast, a cup made of mother-of-pearl, and mounted on a pedestal of gold, was presented, filled with excellent Constantia. The Lord Mayor, next to whom I was placed, used it first, and then offered it to me. Having tasted of the nectar it contained, I gave it to the gentleman sitting next me, and so the cup passed round the guests. With this cup in hand each drank a toast, first to the founder of the schools, and then to Larrey, the surgeon of Napoleon, and afterwards to several other individua'ls of the assembly, more or less remarkable. It is easy to conceive how sensible I felt of this mark of honour, and of interest so tender. That day was assuredly one of the brightest of my life. (*Ce jour fut assurément l'un de plus beaux de ma vie.*)" Pp. 86, 87.

" After having had marks of kindness and attention heaped upon us by all the medical men and magistrates of this remarkable town, we bid adieu to its noble and generous inhabitants, and it was not without sincere regret that we separated from them, especially from the physicians, who had given us so cordial a reception. We shall always preserve the remembrance of Doctors Thomson, Ballingall, Monro, and Cullen: the two last are sons of the celebrated surgeons whose name they bear. All these our honourable brethren gave us proofs, not equivocal, of a friendship truly fraternal." Pp. 88, 89.

We have this month so much matter pressing upon us, that we must deny ourselves the pleasure of giving more extracts, and now close this notice by quoting a passage from the introductory lecture, delivered to the students of military surgery in the University of Edinburgh, by Professor Sir George Ballingall, at the commencement of the present session. It shows us that the Baron's warm feelings towards Edinburgh have not cooled one whit, and also indicates the high esteem in which he holds the distinguished Edinburgh professor. Long may such feelings of amity and mutual good-will exist between professional men, and men of all classes, on both sides of the channel.

" To those instances of enthusiastic attachment on the part of the French soldiery towards distinguished surgeons, I am delighted to add another, occurring in our own day, and occurring to an individual whom I am proud to rank amongst my friends. Of all the dreadful scenes that occurred during Bonaparte's memorable retreat from Russia, the passage of the Berezina was the most terrific. The bridges broken down, and the enemy pressing in all directions caused the most dreadful havoc and confusion; nothing was to be heard but the voice of thousands trodden under foot by their stronger neighbours; nothing to be seen, but destruction and despair! On that fatal day Baron Larrey nearly fell a sacrifice to his anxiety to preserve some cases of surgical instruments. The professional respect in which he was held saved his life. No sooner was he recognised, than the French soldiers, regardless of their own safety, passed him along over their heads, from one to another, till he crossed the only crazy bridge remaining.

" I have, gentlemen, within these few weeks, had again the pleasure of seeing this venerable old man, I rejoice to say in full health and vigour,

[1] George Heriot's Hospital, we presume.

an active member of the French Institute, and still devoting his energies to the improvement of military surgery. In proof of this he showed me, in his cabinet, some remarkable preparations illustrative of a paper which he has recently written, on the consecutive effects of injuries of the head, and to which I shall have again occasion to refer. He presented me also with an additional volume of his 'Campagnes et Voyages,' published within these few months, and containing, amongst other interesting matter, the cases of the numerous distinguished generals in the French service, whose wounds he has had occasion to treat; and an account of his visit to this country in 1826.

"After the last Emperor of France, and our own distinguished chief, the Duke of Wellington, I do not know of a more remarkable man of the present age than Larrey. A sharer in all the glorious achievements of the French army—a sharer also in its reverses, in Egypt, in Russia, and at Waterloo, (where he was wounded and a prisoner,)—the survivor of at least six and twenty campaigns, he lives to employ his maturer years in laying the results of his extended experience before his profession:—he lives to be proud of the compliment paid to him by his great master. On my recent visit to him in Paris, he presented my little boy with a copy of Napoleon's will, in which, amongst other items, is a bequest of a hundred thousand francs to the chief surgeon Larrey, accompanied with the observation, that he was the most virtuous man he had known,—'*c'est l'homme le plus vertueux que j'ai connu.*'"

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

Observations on Parasitical Growths on Living Animals. By G. Busk, Esq., Surgeon to the Hospital Ship, Dreadnought, &c.

The occurrence of parasitical growths, or of organised productions, h a close analogy with some forms of cryptogamic vegetation, upon the faces or within the substance of living animals, and in many instance stituting the cause of disease, is a subject of considerable importan pathology; and although it would be out of place in these pages to into the pathological relations of these affections, yet as the microscop been the means by which the few facts as yet ascertained in this n have been brought to light, it may not, perhaps, be deemed irrelevant object of the Microscopic Journal, to admit a short statement of wha been observed, and thus to bring into one point of view, and attract tl tention of microscopists, to a probably not unfertile field of investigati

1. On the 28th of August, 1832, Mr Owen read some notes befo Zoological Society on the anatomy of the Flamingo, (*Phœnicopterus r* in the lungs of which bird he found numerous tubercles and vomic inner surface of which latter was covered with a greenish vegetable *mo mucor*. Mr Owen presumed that the growths had taken place durin life of the animal, and thence concluded that internal parasites a derived exclusively from the animal kingdom, but that there are *Ento* as well as *Entozoa*.[1]

2. In the year 1835 a disease to which silkworms are subject, k under the name of *Muscardine*, was first described by M. Bassi of Lod M. Balsamo, a botanist of Milan. They ascertained that this diseas owing to the growth, on or within the body of the caterpillar, of a c gamic vegetation. M. Audouin, in 1836 and 1837, in a paper e "Anatomical and Physiological Researches on the contagious disease attacks silkworms, and which is designated under the name of *Muscar* described a series of experiments on the chrysalis of *Bomyx Mor* affected, and which he had received from M. Bassi. He was able to in detail the transformation of the fatty tissue of the insect into radicles lus) of the cryptogamic vegetation, to which he gave the name of *B. Bassiana*.[3]

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[1] Philosophical Magazine, 1833. New Series, vol. ii., p. 71.

[2] Annales des Sciences Naturelles, vol. viii., new series, p. 229, pl. 10, 11.

[3] For further observations on this disease, vide a paper by M. Johanny, A des Sciences Naturelles, vol. xi. p. 65, 80; and one by M. Crivelli, in Schlecte Linnæa, 118, 123; and by M. Bonafous, L'Institut, cclxxix., p. 154; and Pathologisch. Untersuchung.

3. The next observation is that of M. Des Longchamps,[1] in a paper "On the habits of the Eider Duck (*Anas mollissima*)," in which he describes the occurrence of layers of *mouldiness* developed during life, on the internal surface of the aerial cavities of one of these birds, which he examined on the 2d July 1840, while yet warm. This vegetation occurred in the form of flakes or layers, deposited in great numbers on the walls of these cavities. Most of these plates, or layers, were circular, and they varied in size from two or three millimetres to several centimetres. The small bronchial tubes were covered with them in great abundance. Two kinds of these plates or flakes were observed. Beneath the larger ones the membrane upon which they were situated was uniformly reddened and thickened; beneath the smaller ones, towards the centre, a vascular net-work was seen, surrounded by a zone, in which the vascularity was less distinct, and beyond this zone the vascularity was again increased, but in less degree than in the centre. The colour of the smaller flakes was a dirty white; the larger ones were also white, but greenish in the centre. The border of the larger flakes was irregular, which irregularity evidently resulted from their being formed by the confluence of several adjoining smaller flakes. Examined under the microscope, this mouldiness appeared to be composed of transparent non-articulated filaments, slightly, if at all branched, and intermixed like the fibres of felt. These filaments, imbedded in a layer of albumen, were in parts scarcely the $\frac{1}{15}$ of a millimetre in diameter. M. D. further observed numerous ovoid or globular vesicles in the felt-like mass, of the same diameter as the filaments, which vesicles he looked upon as sporules. These growths appeared to have no immediate connexion with the living tissue.

4. A mouldiness of a different kind was also observed by MM. Rousseau and Serrurier,[2] which they describe as being found not unfrequently in pigeons and fowls, particularly in cold and humid situations, or in rainy seasons. These observers found it in the body of a male parroquet, which died of a tubercular disease, in a sort of false membrane between the intestines and vertebral column, which membrane was covered with a greenish pulverulent mouldiness, so light, and so little adherent, that it could be blown off as a fine powder. They further state, that a similar affection has been noticed by them in animals of other classes, as in *Cervus Axis*, and *Testudo Indica*.

5. In 1839, M. Schœnlein[3] announced the fact of the existence of *Mycodermata* in the crusts of *Tinea favosa*. Priority, however, in this observation, is claimed by M. Remak,[4] who says that he made it as far back as 1836, when he stated that *Tinea favosa* consisted of fungoid filaments.[5]

On the announcement of Schœnlein's experiments in 1839, they were repeated by MM. Fuchs and Langenbeck, at Göttingen, who supposed that they proved the existence of *mucores*, not only in the crusts of true Tinea, (*Porrigo favosa* and *P. lupinosa*), but also in the majority of eruptions belonging to what they term cutaneous scrofula, for instance, in the crusts of *Impetigo scrofulosa*, and in those of serpiginous ulcers. These researches are published by M. Fuchs, in his Compte Rendu the Polyclinique of Göttingen, in the *Ann. Hanov.* de M. Holscher, Cahier de 1840, and still later in the first volume of his *Traité des maladies de la peau*, Göttingen, 1840.

Latterly, however, a much fuller and more correct description of this disease has been given by M. Gruby, of Vienna,[6] who states that the crusts of Tinea favosa contain, or in fact are made up of aggregated *Mycodermata*. This growth consists of numerous corpuscles, rounded or oblong, the longitudinal

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[1] Annales des Sciences Naturelles, June 1841, p. 371.
[2] Comptes Rendus, 1841. [3] Müller's Archives.
[4] Medicinisch. Zeitung, No. xvi, Page 73, 74.
[5] Valentin's Repertorium, 1841. [6] Comptes Rendus, 1841.

diameter of which is from about the $\frac{1}{3000}$th to the $\frac{1}{1000}$th of a millim, and the transverse from the $\frac{1}{3000}$th to the $\frac{1}{1000}$th. They are transparent, with a defined border, and smooth surface; colourless, or slightly yellow, and homogeneous. The corpuscles are either separate, or, by their apposition end to end, constitute beaded or articulated filaments, which are simply cylindrical or branched, according to the part of the crust in which they are found. Besides these beaded filaments, other much smaller branched filaments are to be observed, which are furnished at certain distances with partitions, (cloisons végétales), and thus represent oblong cells, in which are found very minute round, transparent molecules. Occasionally, some granules are found adherent to these filament, similar to the spores of *Torula olivacea*, and *T. sacchari*.[1] The form of these filaments is considered by M. Gruby a sufficient proof of their vegetable character, and, according to M. Brongniart, they belong to the group of *Mycodermata*.

Each crust of Tinea is described by M. Gruby to consist of two envelopes, formed by the cuticle, and an aggregation of Mycodermata, which are inclosed within them *like fruit in their pericarps*. The crusts are placed on the *surface* of the true skin, and the *Mycodermata* are developed among the cells of the epidermis.

The external disc of the capsule, which at the commencement is not perforated, becomes open in the centre by a small hole, whose borders are elevated, by the continual development of the Mycodermata. This opening enlarges by degrees, and there is thus formed in the centre a whitish excavation, whilst the borders remain of a yellowish colour. Simultaneously with the enlargement of the opening, the Mycodermata protrude, and are developed like a fungus, and finally the borders disappear; the stems of the Mycodermata are prolonged, and the sporules shoot out vigorously, more in the centre than at the periphery. From this mode of growth, the form of the crust becomes quite altered, it being, when completely developed, convex, instead of concave on the outer surface.

M. Gruby practised inoculation with the contents of these crusts upon thirty phanerogamous plants (but succeeded only once); on twenty-four silk-worms; four birds; eight mammals; and six reptiles, without any result. Similar inoculation in the arm of himself four times, and of another individual once, was followed also by no result, except in one instance, when a little inflammation ensued. Consequently, out of seventy-seven inoculations, one successful result only was obtained, and that on a phanerogamous plant,—a strange fact, as is truly observed by M. Gruby.

At pages 24 and 139 of this Journal will be found notices of various other observations of parasitical growths on animal bodies; but these my limits will not allow me farther detail. In the present number, (p. 155) also, is an account of similar vegetation on the ova of fishes, to which it proves highly destructive.

On the 1st of March 1841, Mr Westwood exhibited at the Entomological Society, dried specimens of Chinese larvæ, from the back of the neck of each of which a slender fungus, twice as large as the body of the insect, had been produced. The vegetation was stated to be analogous to some on larvae from New Zealand, and is named *Clavaria Entomorhiza*.[2] M. Corda gives the figure of a coleopterous insect[3] covered with *Penicillium Fieberi*; and a similar instance of the growth of a minute conferva upon the body of a *Dytiscus marginalis*, occurred a short time since to my observation. This insect was kept in a glass vessel, in which were growing some plants of Valisneria spiralis, the leaves of which were much infested with the con-

[1] Icones fungorum hucusque cognitorum. A. C. J. Corda, Pragæ, 1837, 1840.
[2] Annals of Natural History for November 1841.
[3] Pentatoma prasina, op. cit. Pl. xi.

ferva. The beetle was killed, apparently by the growth of conferva among the branched hairs, with which its spiracula are furnished internally.[1]

These are the principal facts which I have been able to collect on this subject; for it is scarcely worth while to refer to the vague speculations of M. Meynier of Orleans, whose assertion of the analogy of warts and similar growths, with Fungi of the order Gymnospermia; of Lepra and Psoriasis with Lichens and Mosses; and of pulmonary tubercle with Lycoperdon, may, I think, justly be considered more the fruit of a heated imagination than of sure observation. The *Mucores* observed by Langenbeck in the body of a person dead of typhus, had certainly no connexion with that disease: and as for the opinion, that hospital gangrene is dependent on the presence of a fungoid growth, I am unable to refer to the authority, upon which such a doubtful statement is founded.

The above briefly recited facts are far too few in number, and not sufficiently precise, to allow of any general deductions of importance to be drawn from them; but it appears clear,

1. That parasitical growths occur in nearly all classes of the animal kingdom.

2. That these growths arise usually on the surfaces of animal organs, and are sometimes prolonged thence into the textures of the part.

3. That they have in several instances been ascertained to constitute the cause of disease and death; and that the disease thus produced has been found in some cases to be contagious.

4. That they are probably of two kinds, the one peculiar to animal bodies, and the other consisting of these cryptogamic vegetations, which readily sprout up under favourable circumstances, on almost any inanimate substance.

To the former kind may be referred the *Muscardine* of the silk-worm and *Mycoderm* of Tinea; and to the latter, most of the other growths above alluded to.[2]

The vegetable nature of these growths does not in all cases appear so clear as might be supposed. In some of the instances cited above, there can be no doubt on the matter; but in others, and especially that of the *Mycoderm*, constituting the crusts of Tinea, it is allowable to doubt whether the growth may not be more properly referred to the animal kingdom. In fact, it would appear, from the chemical constituents of these crusts, impossible to hesitate in ascribing their contents to that division of animated nature; for according to the analysis of Thenard, they contained

70 Albumen.
17 Gelatine.
5 Phosphate of Lime.
8 Water and Loss.

100

a composition certainly more animal than vegetable. With regard to this,

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[1] [We are informed by Mr J. T. Cooper, that he has frequently removed from the gills of gold fish, kept in a cistern in his garden, a quantity of confervæ, the rapid growth of which over the whole surface of their bodies, in every instance caused death.—*Editor.*]

[2] With the exception of the parroquet, whose case is related by M. Rousseau and M. Serrurier, in which, in the account given by these observers, the seat of the parasitic growth is by no means clearly defined, it would appear that these parasitic growths have nearly all had some relation to the air-passages, and in this point of view it is interesting to refer to the account of *Chrysomyza Abietis*, at p. 155 of this Journal.

also, it is interesting to refer to the paper of M. J. B. Desmazieres,[1] in which the genus *Mycoderma*, founded by Persoon in 1822, is for the first time accurately described and figured. He describes five species occurring in various vegetable infusions. The marked similarity of the figures of some of these species, with the Mycoderm of Tinea, is sufficiently curious, viz. those of *M. glutinis farinulæ* and *M. cerevisiæ*, or those occuring in flour-paste or sour beer. M. D., whose paper is well worthy of perusal, considers, from his having observed the globules of the Mycodermata occasionally in active motion, that they are of animal nature, and gives the following definition of the *genus*:—MYCODERMA.—*Desmaz. Ann. Sc. Nat. Tom. X.* 1*e Ser. p.* 59.—"Animalcula monadina simplicissima, hyalina, gelatinosa, minutissima, prædita locomobilitate plusminusve manifestâ; inter se ab uno extremo ad alterius extremum ordine longo cohærentia, sive in statu primordiali, sive post elongationem plus minusve notabilem; efformantia, hâc adjunctione fila inertia hyalina, creberrima, ramosa, moniliformia, vel dissepimentis conspicua, fere semper incumbentia liquoribus, vel substantiis humidis in quibus nascuntur et ubi, per eorum, implicationem, constituunt pelliculam plus minusve spissam. Generatio per gemmas interiores."

The resemblance in figure, however, of this parasite to various growths, in all probability vegetable, is equally striking, if we do not consider that all growths composed of distinct rounded cells, whether of animal or vegetable nature, will necessarily much resemble each other. For instances of this resemblance, it is only necessary to refer generally to the plates in M. Corda's work,[2] and particularly to the figures of Gonatorhodon speciosa; the extreme filaments of stysanus Caput Medusæ; Torula Tritici; Torula olivacea; Torula frutigena; and several others.

The description of the Mycoderm of Tinea, by M. Gruby, above referred to, so accurately corresponds with the observations I have myself been enabled to make very lately, that I have thought the addition of a few figures of the appearance presented by this parasitic growth under the microscope, would be sufficient to prove the truth of the position, that the disease does in reality consist of such a growth, and that this growth corresponds in every respect with the characters of Persoon's genus, Mycoderma. I have not, however, been able to perceive any movement in the globules themselves, as appears by M. Desmazieres' observations, to have been the case in other species of this genus. There is, however, always to be observed in the fluid with which the Mycodermata may be mixed, a great number of actively moving molecules or minute infusoria.

This Mycoderm is readily seen by placing a fragment of a crust of *Porrigo*, moistened with water, between two glasses. The younger crusts present many of the small branched filaments and separate corpuscles; the larger crusts contain more of the beaded filaments, and in all, *the Mycodermata are found mixed with epidermis scales.—Microscopic Journal*, Dec. 1841.

MICROSCOPIC VEGETABLE PARASITES. BY J. G. VIREY.

According to Dr Gruby of Vienna, the crusts of the *tinea favosa* are the produce of a parasitical plant of the tribe of *mycodermata*. Its yellowish granulations or sporules, quite visible with a microscope, adhere to filaments or stalks, as the learned cryptogamist, M. Montagne, has established by his own observations, and by those of MM. Rayer, Cazenave, and Gibert, able physicians who have particularly studied diseases of the skin.

These granules are the true reproductive σπορα, or organised germs, which

[1] "Recherches Microscopiques et Physiologiques sur le genus Mycoderme."—Annales des Sciences Naturelles, tom. x. 1e. Ser. 1826.

[2] Pracht-Flora Europæischer Schimmelbildungen, Leipzig, 1839.

vegetate and increase when deposited in favourable *soil*. But the epidermis of the downy skin of children, like that of many animals with dirty skin, is easily entangled with dandriff, or dust, and other matters forming a sort of mould capable of nourishing ring-worms, and little furfuraceous lichens. Very minute sporules easily sink into all the crypts of the skin; hence the opinion of authors who say that the bulbs of the hair become the seed of ring-worm. Along with this there is a yellowish exudation like honey and a disagreeable sour smell. Here, as is known, goes on the propagation of this multitude, be it of lice, or other parasites. M. Meynier d'Ornans announced, in 1836, that warts in men are the *veritable gymno sporanges*. It has even been supposed that the tubercles of the lungs and intestines of consumptive and scrofulous patients belong to the family of mushrooms called *lycopodia*. Cancer has been considered as an *uredo caries*, analogous to that which knaws and blackens grain in harvest. Turpin does not admit that the *uredo*, the *puccinia*, *æcidium*, *mycoderma*, are special plants; but supposes that they are kinds of mushrooms formed by a mass of small globules, resulting from the decomposition of vegetable tissue. Opinions on such subjects must always be of doubtful truth.

It is well ascertained that, in hospitals, ulcerations after wounds produce mushrooms. Azotised fat most readily gives origin to these parasites, and different kinds of mushrooms grow on the horns and hoofs of dead animals; the species *isaria trichia*, of Persoon, come under the chrysalis of lepydopterous insects; a Guadaloupe wasp, even when alive, frequently carries a mushroom on its thorax or sternum (Iphœria entomorhiza), as is described by Dickson, and Ricord Madianna. The same is true with the isaria of sphinxes. All these creatures require for food animalized elements. Thus, for some time, a good deal of attention has been bestowed on the generation of various green and dusty moulds in the lungs and air-passages of hens, pigeons, turkeys, geese, sea ducks, peacocks, or in other cavities of the body of a *cervus avis*, of a *testudo indica*, or other, observed by Em. Rousseau, Serrurier, Eudes Deslongchamps, &c. These cryptogamic parasites appear even before death, for as soon as one organism languishes, a new life assumes the empire, so that nothing in nature may be useless.

The ancients, (Varrow, *de re rustica*, and Columelle,) spoke of invisible animalculi as existing principally in the emanations from marches, and causing serious diseases. Such views also were recognised in that pathology of the close of the 17th century, which originated in the microscopic discoveries of Leuwenhoeck. The same hypothesis received the assent of the great Linnæus (Diss. *mundus invisibilis*, Amœn. Acad.) and seems, at the present day, to be in favour, as we may judge by the statements of Gruby as to the pus-worm of small pox, the *vibrion* à pendeloques of other kinds of pus, according to Gruethuisen, and that found by Donné in certain syphilitic discharges from the genital organs of women. The decomposition of animal and vegetable structures forms a sort of greasy matter very suitable to the production of microscopic beings without having recourse to the theory of spontaneous generation, inasmuch as secondary cryptogamic plants are not agamomous, for those which have no visible sexual organ bear reproductive sporules.—Abridged from *Journal de Pharmacie*, Nov. 1841.

EFFECT OF AN IMPERMEABLE COVERING APPLIED TO THE SKIN. BY MM. BRESCHET AND BECQUEREL.

A paper was read at the meeting of the Academy of Sciences, on the 18th of October, by M. Breschet, on experiments on this subject performed by himself and M. Becquerel. According to them, the death of animals whose skin has been shaved, and body covered with a coating of substances impermeable to perspiration, (the substances used were a mixture of glue, resin,

and fat,) is owing to asphyxia. They also endeavoured to discover the variation of the temperature of the body from the time of the application of the covering, to the moment of the death of the animal. It was supposed that, when all evaporation from the skin was prevented, the temperature of the body would be increased, giving rise to violent fever, with its usual symptoms, and death. A contrary effect, however, was observed. In their first experiment, on a rabbit, the temperature of the body before the skin was shaved, was 38°; as soon as the covering was dry, it fell to 32°, and in an hour afterwards to 24° 5. In another rabbit, as soon as the mixture applied had hardened, the temperature was found to be only 3° above the surrounding atmosphere which that day was 17°. In an hour afterwards the animal died. They have also determined, by inserting small thermometers into the right and left auricles of the heart of dogs, that there is a small but uniform difference in favour of the temperature of arterial over that of venous blood. —*Gazette Méd. de Paris*, Oct. 23, 1841.

On the Membrana Decidua and Uterine Glands. By Dr Sharpey.

"The uterine glands alluded to in the text have now been ascertained to exist in several orders of mammiferous animals, and from their enlarged size and augmented secretion during pregnancy, as well as the peculiar connexion which is then established between them and the fœtal membranes, it has been inferred that they are in some important way subservient to the nutrition of the fœtus. The uterine cotyledons of Ruminants were very generally considered to be of a glandular nature by the older anatomists, and as destined to supply a nutrient matter to the fœtus; indeed, it had not escaped notice, that these bodies actually yield a mucilaginous secretion. But besides the cotyledons, Malpighi discovered glands opening on all parts of the inner surface of the uterus of those animals, and recognised them as secreting organs. He has described them specially in the gravid uterus of the sheep. (Opp. 1687, vol. ii. p. 220.) At a recent period, the uterine glands of Ruminants were again observed by Baer, who also discovered similar glands in the sow; and although he erroneously supposed they were absorbent vessels, he described them well, and showed that they were connected in a peculiar manner with the ovum; the dilated orifices of the glands being attached to small vascular spots on the surface of the chorion, which, in the sow, he describes as formed by little circular or star-like elevations of the membrane surrounding a central depression. (Ueber die Gefaessverbindung zwischen Mutter and Frucht, 1828.) This arrangement was justly considered by Dr E. H. Weber, who afterwards investigated the subject, as a provision for the accumulation of the secreted matter of the glands, and for securing its effectual exposure to the blood-vessels of the fœtus. Weber also more fully described the glands in Ruminants, and observed glands of the same nature, though of a different form, in the uterus of the rabbit (loc. cit). Still more lately, uterine glands have been discovered in the pregnant porpoise, by Dr Eschricht of Copenhagen; and in the gravid uterus of the cat, the same observer found oblong cells lying under the mucous membrane, which he considers to be glandular cavities, though he could not discover their orifices on the inner surface of the membrane. (De organis quæ resp. et nutr. fœtus mammal. inserviunt. Hafn. 1837, p. 43.) Having had occasion to observe these glands in the uterus of the bitch, and having examined their condition in various stages of pregnancy, as well as their relation to the membranes of the fœtus, I beg to subjoin an outline of my observations.

"The glands of the mucous membrane of the bitch's uterus are of two kinds, simple and compound. The simple glands, which are the more numerous, are merely very short unbranched tubes closed at one end. The com-

pound glands have a long duct dividing into convoluted branches; both open on the inner surface of the membrane by small round orifices, lined with epithelium and set closely together. After impregnation, the parts of the mucous membrane which come into immediate relation with the ova, together with the glands seated in those parts, undergo a remarkable alteration. In a uterus between three and four weeks after conception, at which period the dilatations or chambers which contain the ova attained the size of a walnut, we find, on laying open one of the chambers, that the lemon-shaped ovum is surrounded by a broad belt or zone of villi, which rise from the surface of the chorion, and, becoming vascular, take part in the formation of the zonular placenta. Corresponding with this, there is a zonular portion of the inner surface of the uterus, somewhat raised above the rest, and perforated with small pits, into which the fœtal villi are received; and as this part of the membrane enters into the formation of the placenta, and comes away with the ovum at parturition, it is justly regarded as the decidua. The decidua is no new structure, however; it is merely a portion of the mucous membrane become more thick and vascular than the rest, and the pits on its surface, which receive the fœtal villi, are merely the glands already mentioned somewhat enlarged and widened. While, however, the simple glands merely undergo a uniform enlargement, a change takes place in the compound glands of a much more remarkable character. The long excretory ducts of those glands, immediately before they open on the inner surface of the membrane, become dilated into cells, one for each gland, which are filled with a semi-fluid whitish granular secretion, and are lined with epithelium. These cells form a layer beneath the surface of the decidua, and being crowded together, assume a polyhedral form. At the bottom of each, the tubular duct may be seen about to expand into the cell, and the cell again contracts at its orifice.

"In a somewhat more advanced stage, the glandular cells enlarge, their orifices expand, and now membranous processes rise from the surface of the ovum and enter the glandular cells, passing a little way beyond the orifices, by the circumference of which they are embraced. These fœtal processes are prolonged from the chorion and its vascular lining or endochorion, and hence contain ramifications of the umbilical vessels. They are for the most part hollow or saccular, at least at first, and some of them present, for a time, a small aperture of communication between their cavity and the general sac of the chorion, or rather of its vascular lining, but this is soon obliterated; ultimately, they come to resemble much the villi in structure, differing only in size and form. As pregnancy advances, the parts described enlarge, the villi become more complex by ramification, the fœtal processes also give off numerous lateral offsets; but their broad flattened tops, which close the mouths of the glandular cells, are smooth and even, and are covered with a prolongation of the same epithelium which lines the cells. The maternal or decidual vessels are everywhere closely applied to the surface of the villi, and fill up the intervals between them. They also closely embrace the fœtal processes, except at their expanded summits, which, as before stated, are in contact with the secretion of the glandular cells. The maternal vessels, in proceeding from the uterus, first ramify on the parietes of the cells, by which they are supported; but as they approach the villi and surface of the ovum, they form an abundant network, the branches of which are unsupported by membranous structure, seemingly as if the intermediate tissue of the decidua had disappeared, its vessels alone remaining in the later periods of pregnancy. At parturition, the decidual vessels come away with the ovum; the parietes of the now greatly enlarged glandular cells also separate in great part from the uterus, leaving merely the bottoms with the round openings of the glandular ducts in their centres. After separation of the ovum and placenta, numerous truncated and somewhat shrivelled vessels project from the inner surface of the uterus; they are chiefly veins, and

they may be seen for a considerable time after parturition, on those parts of the uterus to which the ova had been attached.

"From the description given, then, it follows, that in the placenta of the bitch there is an arrangement by which a matter, secreted from the enlarged glands of the uterus, is brought into proximity with the vessels of the fœtus; and seeing that a provision of a similar nature is found in various other instances, it is not improbable that in viviparous animals generally, a matter deposited from the maternal system by means of a glandular apparatus may be absorbed into that of the fœtus, and serve for its nutrition; but this is a question which can be determined only after a more extended investigation. As connected with this subject, the source of the well-known green-coloured deposit found at the borders of the placenta of carnivora would naturally become an object of inquiry; but on this point I cannot as yet speak with certainty.

"*Human Decidua.*—These observations on the decidua of the dog led me to examine anew the human decidua, and more especially its relations to the mucous membrane of the uterus; and I shall now briefly state the result, although I find I have been in a great measure anticipated by Weber, as appears from the statement of Professor Müller in the text. It is right to mention, however, that the results were arrived at quite independently of Weber's observations, and, indeed, before the original of the pages of this work in which they are noticed reached me.

"In various instances in which there was reason to believe that impregnation had recently taken place, and in which the ovary contained a recent corpus luteum and the uterus a distinct decidual lining, though no ovum had been discovered, the decidua, in some places one-tenth of an inch thick, seemed obviously to consist of the thickened mucous membrane. Its surface presented a multitude of small round apertures, which, on a vertical section, were seen to belong to the tubular glands of the mucous membrane, elongated and enlarged. These tubes were lined with a white epithelium, which rendered them very conspicuous. They were much waved and contorted towards their deep and doubtless closed extremity; and at various parts they appeared to be implanted at some depth in the tissue of the uterus. Whether any of them divided into branches I could not determine. In a specimen belonging to Dr John Reid, the uterus contained an early ovum, considered as dating little more than fifteen days after conception. The decidua vera was somewhat corrugated on the surface. It had the usual cribriform aspect, and the pits were for the most part wider than in the earlier examples; but the smaller orifices still presented the character of the tubular glands, and others showed an obvious transition between these and the larger ones. On making a section parallel with the surface, it appeared that many of the pits had a comparatively wide cavity, with a narrow orifice. From these and other observations of a similar kind, I was led to conclude that the apertures on the decidua which give to that membrane its well-known cribriform character, however much they may be modified in the later stages of pregnancy, are originally nothing else than the openings of the glands of the lining membrane of the uterus; and that, as in the bitch, the mucous membrane is really converted into the decidua, and discharged from the uterus at parturition,—an opinion, it may be remarked, adopted on other grounds by various continental physiologists. In a uterus supposed to have been recently impregnated, and in which the vessels had been minutely injected with vermilion, the lining membrane or commencing decidua appeared everywhere pervaded by a network of blood-vessels, in the midst of which the tubular glands were seen, their white epithelium strongly contrasting with the surrounding redness. In more advanced stages the veins of the decidua form large ramifying canals in the substance of the membrane, which freely communicate with the uterine veins. On inflating these venous canals of the decidua with a blowpipe, the air will

frequently pass out at the openings on the surface of the membrane which we have considered as the orifices of the enlarged uterine glands, and it might hence be concluded that there is a natural communication between the two. I am nevertheless disposed to think that the venous canals and glandular recesses form two separate systems of cavities within the decidua, divided from each other by very thin parietes, which are easily ruptured. I am inclined to adopt this opinion, in consequence of repeated examination, in various ways, of the structure in question, (though I must admit that the result has not been always favourable,) and also from considering that the pits in the decidua appear, as already stated, to be merely the enlarged uterine glands, which, when observed in earlier stages, seem to have the same relation to the surrounding blood-vessels of the decidua as is known to subsist between glands and blood-vessels in general.

"An objection to the opinion that the decidua is merely the altered mucous membrane of the uterus, which will naturally occur, is the difficulty of accounting on that view for the investment of the ovum by the decidua reflexa, which is continuous with the uterine decidua, and is believed by most, though not by all physiologists, to have a similar origin. At the same time the force of this objection is lessened by the fact, that the decidua reflexa, though continuous with the vera, does not, usually, at least, present the same character as the vera throughout its whole career; for, without laying stress on the differences generally pointed out by authors, I may state, that in various conceptions which I have examined, the decidua reflexa, in a great part of its surface, was destitute of the small orifices which characterise the vera, and that these were confined chiefly, though certainly not entirely, to a zone of the membrane adjoining the angle of reflection, that is, to the part next the decidua vera. Now, if this observation be found to hold good generally, it will not be necessary to suppose that the lining membrane of the uterus is extended over the whole surface of the ovum to form the decidua reflexa; and although I am not prepared on such limited observations to offer a decided opinion, especially on a question of acknowledged difficulty as this is, still, as at least a possible explanation, it might be suggested that the minute ovum, on its entrance into the uterus, is covered with exuded lymph, either entirely or on that part of its surface which does not adhere to the inside of the uterus; that as the ovum enlarges, a circular fold of the altered mucous membrane (decidua) is drawn up upon it, all round its adhering part, enveloping the ovum to a greater or less extent, and afterwards forming the cribriform zonular portion of the decidua reflexa, whilst the remaining thin smooth portion of the latter membrane, which is more distant from the line of reflection, and is destitute of apertures, is formed by an extension of the covering lymph. Or perhaps the following more simple explanation might not be inadmissible; viz. that the minute ovum, on reaching the uterus, becomes imbedded in the substance of the then soft and pulpy mucous membrane, and that in its subsequent enlargement it carries along with it a covering of the membrane, which is expanded into the decidua reflexa.

"Are the cells observed in the human decidua, by Dr Montgomery, identical with the dilated uterine glands? Dr M. occasionally found them to contain "a milky or chylous fluid," but he does not describe them as opening on the inner surface of the membrane.

"In acknowledging the kindness of my friend Dr John Reid, now Professor of Medicine in St Andrews, in freely placing at my disposal some very valuable specimens in his collection, I deem it due also to that gentleman to state, that he had previously observed the tubular structure of the mucous membrane of the uterus, and was led, by an examination of recently impregnated uteri, to infer that one of the earliest changes which occurs after impregnation, was an increased development of the tubular structure, and this he conceived was connected with the formation of the decidua. At the same

time, he did not suppose that the mucous membrane was converted into the decidua, but was disposed to think that the decidua was secreted by the tubes of the mucous membrane."—*Note by Dr Sharpey to Baly's Translation of Müller's Physiology.*

PRACTICE OF PHYSIC AND PATHOLOGY.

On the Treatment of Insanity by Moral Means. By Dr Leuret.

A paper on this subject was read by Dr Leuret, before the Royal Academy of Medicine, and a report upon it was ordered to be prepared and laid before them. The following is an abstract of the report and pamphlet. The first part of the paper consists in some general observations on the treatment of insanity, and especially that by moral means. These operate in two ways; first, by bringing the diseased functions to their natural condition; and, secondly, by acting on functions which are healthy, and producing thus a diversion from the diseased organ. Sometimes one, and sometimes both methods, are followed, according to the character of the patient, and the nature of his hallucination. Whatever kind of treatment we are resolved to follow, whether we wish to act directly on the perverted functions, or whether we endeavour to make a diversion from them, it is necessary to be fully aware of one thing, viz. that we must wait patiently, and not allow ourselves to be discouraged, and be ready to profit by any slight improvement, in order to obtain still greater. Until a lunatic has once made a concession, he may be regarded as inattackable; but if he once yields, he may yield still more. If we neglect to take every advantage of any improvement, however slight, when compared to the trouble required, a case of lunacy which might have been cured at first, may terminate by becoming completely beyond all medical resource. The means which Dr L. employs when acting directly on the diseased functions are, warnings, exhortations, counsels, and authority exercised, according to circumstances, with more or less rigour. The reporters to the Academy are of opinion, that Dr L. cannot be reproached as following a system of intimidation. It can well be conceived, they say, that such a system, in some circumstances and towards certain individuals, may become indispensable, and that it may be of great practical utility. In individuals whose reason is lost, and in those whose reason is not yet fully developed, there exists some analogy. A complete system of moral treatment ought not to be adopted in every case of lunacy, in the same way as a uniform system of education cannot be followed in all children. Mildness undoubtedly is the best general method; but constraint, as an exception, sometimes becomes necessary. In fulfilling his second object, viz. in making a diversion upon one or several of the healthy intellectual organs, he endeavours to give to these faculties an unusual stimulus, so as to fix, in a serious and sustained manner, the attention of the patients. Dr L. admits that the treatment of lunacy by moral means is by no means new, as it was known and practised by the ancients, as well as by many of the moderns. Notwithstanding the examples of Pinel and Esquirol, who owed many of their cures to this practice, and to the doctrines spread in consequence by them, those who pretend to have found in the brain alterations sufficient to account for lunacy, persist in treating this disease by physical means; if they make use of any moral agency, they consider it entirely accessory, and are not inclined to impute to it any importance. In this, he says, they are in error, as the alterations in the brain, met with to this day in lunatics, are not sufficient to explain the incoherence of ideas, and all the phenomena charac-

teristic of insanity; and also because, were these lesions well demonstrated, which they have been but slightly, we ought still to employ those moral means known as efficacious, rather than have recourse to such physical remedies as fatigue and weaken the organs, without improving the reason. He then cites two cases of monomania which were cured, out of many which he could have done, as examples of his method of treatment. Our limits, however, will prevent us from giving them. Although Dr L., as might have been expected, is most partial to the moral treatment of lunacy, he by no means wishes to proscribe every other. If there is any appreciable physical cause, he says, which has produced the delirium,—if the brain is diseased,—if it is altered in its texture and in its physical properties,—ought the insanity to be treated by moral agents! In such a case, the moral treatment would not only be useless, but injurious. To maintain that moral diversions were of themselves sufficient for the treatment of the insane, would be to commit both an error and a fault. As an inevitable consequence of this principle, the insane would require none of the resources of pharmacy. The study and the treatment of every alteration of the intellectual faculties would soon escape from the domain of medicine, and philosophers, moralists, and theologians, would hasten to arrogate them to themselves. Science and humanity would suffer equally from it; for in our opinion (the reporters to the Academy), if the physiology of the human understanding is still in embryo,—if the analysis of the functions of intelligence has but added little to our knowledge of mental alienation,—it is evident that, as yet, psychology has not been cultivated in a sufficiently grave and serious manner, by men deeply versed both in the medical sciences and in the practice of medicine. Besides, it is important to remember, that many cases of monomania which at first sight would appear to belong entirely to a derangement of the moral faculties, present most frequently marked alteration of function in some of the organs of organic life; for example, great restlessness, want of sleep, morbid appetite, constipation, or great physical apathy, somnolence, want of appetite, diarrhœa, &c.; in a word we may say, that in the treatment directed solely against the derangement of the moral functions, both hygiène and pharmacy are of most essential benefit. As already mentioned, what has appeared to retard our knowledge of mental diseases, is the great neglect which physicians have paid to the study and analysis of the human mind. Have we not been prone to receive facts in a manner too imperious, and have we not neglected in this, the mode, the elements, and the advancement of all sciences! In physics, we study at first bodies in their primitive state, before we pass to the examination of their successive transformations or accidental combinations. In medicine even, it is by physiology that we derive our knowledge of pathology. Undoubtedly, the physiology of the human mind is a difficult subject; but is there a way of overcoming a difficulty without attacking it! The reporters are of opinion, that this great neglect may in some measure be imputed to Pinel, who commences thus his treatise on mania: "We would make a bad choice, if we were to select mental alienation as a particular object of our researches, and deliver ourselves up to vague discussions on the seat of the understanding, and the nature of its different lesions, for nothing is more obscure and impenetrable."

Of the two kinds of moral treatment, that which acts directly against the false ideas is the least successful. It is not so often applicable as the other, and is sometimes not exempt from disadvantages. When a discussion is entered into with a patient, upon the subject of his insanity, if it is not useful, it is almost necessarily injurious; and in order that it may become useful, the physician must not only be in the right, but be able to make the lunatic believe so, otherwise he becomes more obstinate in his opinions, from his first apparent success. This is not the case with those means which are intended to strengthen the healthy functions of the mind. They are never prejudicial, but, on the contrary, are often attended with the greatest advantage. By occupying a patient's mind with objects and pursuits opposed to his

false ideas, is in fact to free him for a moment from his disease, and to give to his intellect a new force. The means employed for this kind of revulsion are very various, and consist in every thing which can rouse his attention, raise his imagination, and exercise his judgment. The art of the physician does not lie in discovering them, but in being able to apply them appropriately. Corporeal labour, which has been recommended since time immemorial, and which has been employed with such utility both in France and in other countries, has already produced great advantages; but these advantages are not sufficient; for corporeal labour, although favourable to the re-establishment of the intelligence, does not rectify the ideas in the same way as intellectual labour does. One may work with his hands, and rave at the same time for years; as labour opposes but a feeble obstacle to the wandering of thought. This is not the case, however, with intellectual labour. By it we concentrate our thoughts upon a fixed object, and oblige the mind to free itself from its previous fancies, in order to apply itself to a real and serious subject. The more that lunatics are congregated together in the same place, the more necessary is it to exercise their intelligence. Abandoned to their own impulses, they are seized with some fixed ideas; they become indifferent to everything else, and oppose no constraint to their false impressions. But when subjected to a common regulation, and called to take an active part in intellectual labours, their faculties are awakened, and their judgment is improved. It is desirable, then, that institutions and schools, suited to exercise the intellect, should be established in all asylums for the treatment of mania, as these schools may be regarded as excellent means of cure. A teacher and a professor of music were appointed to the Hospice de Bicêtre in 1839, and reading, writing, arithmetic, geography, and history, are taught there. The patients, or rather the pupils, are occupied at school, some of them for the whole day, while others, again, only go there after their labours in the field or the work-shop. Several (these are among the most stupid) are taught dancing and gymnastic exercises; and all that possibly can, meet each evening, when the day is terminated by a concert. A well-directed school of this kind is calculated to do much benefit, in favouring the cure of the patients, and in making their life less miserable when confined than it is at present.—Abridged from *La Mémoire sur la Revulsion Morale dans le Traitement de la Folie. Par F. Leuret.*

On the Prophylactic Treatment of Pulmonary Consumption. By Dr Paris of Gray.

The author declares that, since the discovery of auscultation and percussion, consumption is in general more rapidly fatal, on account of the mental anxiety from which the patients suffer, and the debilitating remedies to which they are subjected.—*L'Examinateur Méd.*, 21st Nov. 1841.

Cases of Chronic Farcy, followed by Acute Glanders; also a Case of this Disease transmitted from Man to Man.

M. Bérard presented, on the 2d November, at the Academy of Medicine, several pathological specimens taken from a man who died from acute glanders. This individual, a groom, who had charge of horses, affected with this disease, had laboured for several months under chronic farcy. The disease was not produced in a horse, when inoculated with matter taken from an abscess in this man; but as the horse was old, and ill at the time with some severe complaints, under which he soon sank, no inference can properly be drawn from the result of this inoculation. That the diagnosis was too true, was, however, soon verified by the occurrence of acute glanders in the patient himself. Eight days before death, the left eyelid and temple began

to swell, and became inflamed, hot, and painful. Small pustules, followed by ulceration and gangrene, soon made their appearance here and there in the temples and cheeks. He died six hours after these were observed. A sero-purulent infiltration was found in the cellular tissue, in the temporal and frontal region, and the mucous membrane of the nose was disorganised, ulcerated, covered with a concrete matter infiltrated with blood, and seemed, as it were, in a state of gangrene.

At the meeting of the Academy on the 15th, M. B. mentioned, that since reading his paper on glanders, he had had a case in which that disease had been transmitted from man to man. He said that it was the first of the kind that had been observed, although horses, when inoculated with the matter taken from the human subject affected with this disease, were seized with it, and died in consequence. The case he alluded to was that of a medical student, one of his dressers in the Hôpital Necker, who had charge of the patient mentioned in his last paper. During the time that M. Rocher (the medical student) was engaged in dressing the sores, he had neither scratches nor excoriations on his hands, and he was very careful always to wash them after he had finished. For some time before the death of the groom, M. R. had suffered from colic and diarrhœa; but it was only on the night following the post-mortem examination (at which he had assisted) that the disease fairly showed itself. It commenced by rigors, fever, and general pain of body. On the two following days, although unwell, he rose, and left his room; on the third, however, the pains were severer, and became fixed in the left thigh, right shoulder, and right side of chest. On the fifth, tumours, having the characters of those seen in glanders, were observed in the left thigh and right shoulder: the one in the latter situation became absorbed, but the other, in the former, went on to suppuration. It was opened six days after its first appearance, when pus, mixed with blood, escaped. On the same day, a horse was inoculated with it. Another tumour, which formed over the inner ankle of the right foot, also went on to suppuration. On the fourteenth day, the nose inflamed; and on the fifteenth, the inflammation had extended to the cheeks, eyelids, and forehead, over which were interspersed, here and there, pustules and gangrenous phlyctenae. M. R. became gradually worse, and died during the night of the sixteenth day of the disease. The horse which had been inoculated also died on this day, with all the symptoms of glanders. As M. R. had not pricked himself during the post-mortem examination at which he had assisted, and had had no excoriations on his hands, M. Bérard was of opinion that it was not by inoculation, but by infection, similar to that in small-pox or scarlet fever, that M. R. had contracted the disease. Two other cases of glanders were read before the Academy of Medicine on the 16th of November; the one, an acute case, and which terminated fatally, was first under the charge of M. Velpeau, and then of M. Bouillaud. The other was chronic, but ultimately became acute, and terminated also fatally. From 1837, at which time the patient had first come in contact with glandered horses, he had suffered from constant pain in the throat. In July 1841, an abscess formed over the instep of the left foot. The palate was at this time ulcerated. On the 6th of November, the symptoms of acute glanders made their appearance, and he died in five days.—Abridged from *Gazette Méd. de Paris* for 7th and 20th Nov. 1841.

On Amaurosis from Hysteria. By Dr Hocken.

Among the numerous derangements and diseases which hysteria is capable of simulating, imperfection of vision is one, to the diagnosis of which, sufficient attention has not been paid. Cases manifestly of this nature are recorded by various authors, but have not hitherto been recognised as being a distinct form of amaurosis. This, which the author designates "amaurosis from hysteria," may be an acute or chronic affection, and seems almost invariably

to have, from its exciting cause, derangements in the *primæ viæ* of an acute or chronic character, aided by mental excitement, slight bodily injury, or fright. The affection always exists in *both* eyes at the same time. In the acute form the symptoms come on with an intensity and hurry never observed in common inflammations, and both forms are accompanied by anomalous head symptoms, with the ordinary symptoms of hysteria, as globus clarus and increased secretion of urine, and frequently with other local phenomena of a distinctly nervous character. There is loss or impairment of vision, with extreme insensibility to, and intolerance of light; but on examining the eye-ball, we find no unnatural appearances, not even vascularity of the conjunctiva, except a transient redness, after continued exposure to light. The pupils are contracted, but sensible to the alternations of light and shade. In fact, with the exception of morbid irritability of the retina and conjunctiva, and sympathetically of the lachrymal gland and orbicular muscle, the eye and its appendages appear perfectly normal in their structure and condition. Uterine disease, or functional derangement, may or may not exist at the same time, but is no more necessary in this form of amaurosis than the author considers it to be in hysteria itself. The diagnosis of this affection will be founded on the derangements which precede or accompany it, the history of the patient's constitution, and the peculiarity of the symptoms themselves. From sympathetic uterine and abdominal amaurosis, it is to be distinguished by the following circumstances noticeable in these forms of the disease: the precedence of uterine or abdominal irritation,—the absence ordinarily of intolerance of light,—the limitation of the affection to one eye only,—the presence of strabismus, which never complicates the hysterical form,—and indications of a greater or less degree of vascular congestion in the eye and its vicinity. As regards the prognosis, there is reason to expect that the amaurosis will be cured by the same means which put a stop to the hysterical state of the system; though, judging from the analogy of long-continued functional disturbance in other organs, it is possible that through continuance for any length of time, this simple functional alteration of sensation and sensibility might insensibly pass into a state of amaurosis from inflammation or congestion; and the author has seen cases of the chronic form exceedingly obstinate, and, even when subdued, recurring again and again. He has always found acute attacks yield rapidly to efficient treatment. In treating the acute form of this affection, attention should be directed first, to "that derangement of function which calls the constitutional disorder into activity; and, secondly, to the correcting the condition of the general nervous system itself, whilst mere local treatment directed to the condition of the organ of vision itself, is surely required. In the chronic forms of this disorder, the treatment mainly turns on the correction of the hysterical constitution itself, involving of course the removal of any local disease or derangement which may excite or keep up the affection; and, lastly, local measures, directed especially to the condition of the suffering organs, both as to sensibility and vision."—*Edin. Med. and Surg. Jour.*, Jan. 1842.

Case of Fatal Encephalitis with Hemiplegia, immediately excited by Cantharides, in consequence of intense Predisposition from Basilar and Internal Carotid Aneurism. By Dr Kingston.

A boy died after taking a quantity of cantharides, by much too small to have proved fatal of itself. But there existed a large aneurism of the right internal carotid, as well as one of the basilar artery, about the size of a walnut, and pressing upon and flattening the pons varolii. Besides the post-mortem appearances of inflammation of the stomach, kidneys, and bladder, usual after poisoning with cantharides, there was found to have been inflammation of the brain, with effusion into one of its ventricles. This inflammation the author considers to have been the cause of death, and to have been

produced by the nervous impressions conveyed to the brain from these irritated and ultimately inflamed organs on which the cantharides primarily acted, the brain being predisposed to inflammation by the aneurisms in its vicinity, and by the pressure of one of them upon it. The case is one of a class to which perhaps sufficient attention has not been given, in which, from the influence of preexisting disease, life is cut short by doses of poison too small to prove fatal to persons of sound constitution. It is also important, in a pathological point of view, as showing that a basilar aneurism may, if developed gradually, attain the size of a walnut, and may excite a pressure sufficient to flatten the pons varolii, without officially interfering with its functions.—*Edin. Med. and Surg. Jour.*, Jan. 1842.

SURGERY.

On the Reduction of Dislocations by means of the Pullies. By M. Marchal.

M. Marchal, after detailing the history of the pullies, their first employment, and especially the improvement invented by M. Sédillot, viz., the application of an instrument to the pully, to indicate the force employed, enters into a comparison between the old method of reduction by assistants, and the modern one by them. Many practitioners, he says, dread the very name of an instrument for reduction, from an idea of the complication of the apparatus. He endeavours to show the absurdity of this. The principal objection to the pullies is, the fear of producing such a degree of force, that we cannot calculate the power employed, nor foresee the consequences resulting from the use of such a power. But M. M. clearly demonstrates, that, with the dynamometer, we regulate exactly the power employed, that we seldom require to use force greater than 150 kilogrammes, or at the very utmost 190, while, with the assistants, a much greater one is brought into play, which, according to the calculations of M. Sédillot, amounts, when six are employed to 600 kilogrammes. Another of the advantages of the pullies is, that the power had recourse to, is steady and constant, that consequently much less is required, while the extension by assistants is always uncertain, from the impossibility of getting them all to pull with the same force, that although great at one time, it is comparatively feeble at another, and the muscles, therefore, of the dislocated limb are not so soon or so easily fatigued. M. Marchal uses the apparatus in the following manner: The limb being surrounded by a flannel roller, a band of leather properly stuffed, is applied at the lower part of the dislocated bone, and fixed by means of buckles and straps. At its inferior part there is a slit, to allow the flexion of the limb, as it is of great importance to keep the articulation next to the one dislocated, in a flexed state. At the sides of the band of leather are two rings of steel, into which are fixed two hooks ending in a small cord; to the centre of this is attached the dynamometer, which is thus fixed by one extremity to the limb, and by the other to the first set of pullies. The second set is attached by a ring to the wall, or any other solid and immoveable body. The two pullies are united by a cord. All being properly arranged, an assistant takes hold of the cord of the pullies, and rolls it round a stick to save *his hands being cut.* The operator must attend to the dynamometer, and the apparatus, observe the power employed, see that nothing goes wrong, and change the direction of the extension if necessary. Eighteen cases are given by M. Marchal, in which the pullies were used,—all, in fact, that he was aware of. The following table will show the principal facts connected with each case.

Surgeons' Names.	Kind of Dislocation.	Duration of Disease.	Force employed.	Result.
M. Sédillot.	Of the arm, backwards.	More than a year.	150 kilogrammes.	Reduction.
...	Of the arm, forwards.	24 days.	125 ...	Do.
...	...	3 months.	125 ...	Do.
...	Of the arm, backwards.	17 days.	160 ...	Do.
M. Malgaigne.	Of the arm, forwards.	5½ months.	120 ...	Do.
M. Sédillot.	... ...	9 months.	125 ...	Unsuccessful.
M. Hip. Larrey.	... ...	2½ months.		...
M. Sédillot.	Of the elbow, backwards.	1½ months.		Reduction.
M. Nichet.	... ...	2 months 10 days.	190 ...	...
...	... ...	4 months.	164 ...	Unsuccessful.
M. Gerdy.	... ...	6 months.	... ...	...
M. Sédillot.	Of the femur, upwards and outwards.	5 months.	75 ...	Reduction.
...	... ...	17 days.	100 ...	Unsuccessful.
...	... over the pubis.	Recent.	... ...	Reduction.
...	... upwards and outwards.	3 months.	100 ...	Unsuccessful.
...	... into the foramen ovale.	4 days.	100 ...	Reduction.
...	... upwards and outwards.	18 days.	150 ...	Unsuccessful.
M. Gerdy.	... into the sacro-sciatic notch.	Recent.		Reduction.

a several of the cases where the attempt at reduction was unsuccessful, sion was given up much too soon, and before that degree of power to ch we can have recourse without danger had been obtained, either from wish of the patient, or from the fear of the surgeon himself. In the re- cases, the pullies were successful, after the ordinary method had failed. following are the conclusions that the author comes to.

st, The pullies are by no means an irregular power, as by means of the amometer we can regulate exactly the degree of extension required.

l, Experience proves, that a force equal to 150, or at most 190 kilo- ames, is sufficient to reduce a dislocation.

l, The rule in applying the pullies, is to raise the extending power gra- ly and slowly by 10 or 20 kilogrammes.

h, Every luxation which has resisted an extension equal to a power of a 150 to 190 kilogrammes, ought, in the present state of science, to be ared irreducible.

5th, Severe and fatal consequences have followed the employment of extension entrusted to assistants, but never from the use of the pullies.

6th, The pullies may be applied without any great risk, in all cases of dislocation, of whatever standing they may be. Thus, one of the questions which has greatly occupied the attention of surgeons, is settled, viz. what is the latest period that an attempt at reduction ought to be had recourse to?

7th, The pullies, in fine, are the mildest, the most regular, and the most efficacious means that a surgeon has at his disposal, in the reduction of dislocation.—Abridged from *Annales de la Chirurgie Française et Etrangère*. Nos. of May and June, and *Gazette Médicale de Paris*, 21st August 1841.

LIGATURE OF SUBCLAVIAN ARTERY FOR THE CURE OF AXILLARY ANEURISM, CAUSED BY GUN-SHOT WOUND. By JOSIAH C. NOTT, M.D., Mobile, Alabama.

The following case contains several practical facts of some value, and may not be uninteresting to surgeons who are called upon to operate for aneurism.

The subject, Mr Christopher L. Clausel, aged 30, is a very respectable gentleman, of good constitution and good habits, of Claiborne, Alabama. On the 27th August 1838, while hunting, he was holding his gun (charged with small shot) by the muzzle; the gun went off accidentally, and the whole load, after passing through the wrist, lodged in the axilla. Considerable hemorrhage ensued both from the wrist and axilla. Dr Watkins, who was in attendance, found it necessary to amputate the arm above the wrist, three hours after the accident; no artery required ligature, and this fact, with the hemorrhage from the axilla, induced the belief that the axillary artery was injured by the shot.

A slough formed in the axilla, which commenced separating in four or five days. On the twelfth day a hemorrhage occurred from the axilla, and about a quart of blood was lost; it was commanded by a compress on the wound. On the next day a hemorrhage again occurred to about the same extent. On the sixteenth day a third and most alarming hemorrhage took place, completely exhausting the patient. A compress was again applied, and the hemorrhage did not return.

On the eighteenth day the slough separated, leaving a cavity as large as an egg, and exposing the ribs. The artery could neither be seen nor felt; the healing process soon commenced, went on rapidly, and by the middle of October it was filled up, leaving only a narrow ulcer an inch long. About this time the aneurismal tumour commenced in the axilla, and increased rapidly.

Mr C. came down to Mobile to consult me, and I saw him for the first time on the 3d of November. On examination, I found a large aneurism, filling up the axilla, and extending nearly to the clavicle; pulsations strong, and aneurismal thrill distinct. I advised tying of the subclavian artery above the clavicle, and performed the operation on the 27th of November, in the presence of Drs Fern, Woodcock, and Crawford. No difficulty occurred during or after the operation, and every thing went on favourably. On the twenty-sixth day after the operation—the ligature still remaining firm—I attached to the end of it a gum-elastic thread, laid a small compress on the clavicle, drew the thread over this, and fixed it to the chest by an adhesive strip. It was thus made to exert a constant and gentle force upon the ligature. On the thirty-first day the ligature came away; and had it not been for this contrivance, it would probably have remained a considerable time longer; although the ligature was tied so tight around the artery, that I could scarcely pass an ordinary-sized pin through the loop after it came away.

At the end of forty days the patient returned home with the wound heal-

ed, the tumour much diminished, but the pulsation, which returned two days after the operation, was still strong, and *purr* distinct.

I saw the patient five months after the operation, and though diminished, there was still so much pulsation in the aneurism, and the *purr* so distinct, as to alarm the patient.

I lost sight of the patient until April 1841, more than two years after the operation, when I had the gratification to see him perfectly well in every respect.

Remarks.—This case proves, that the return of pulsation, though strong and continuing for months, is not necessarily a cause of just alarm. The use of the gum-elastic thread, to facilitate the removal of the ligature after a reasonable time is allowed, I think is also important; for the ligature keeps the wound suppurating, and there is always danger of the pus burrowing into parts where it would do mischief. There is a case recorded in the Medico-Chirurgical Review, where the ligature remained eighty days.—*American Journal of the Medical Sciences*, July 1841.

Ligature of the Common Carotid Artery, and Experiments on the Ligature of both Carotids in Animals.

M. Jobert de Lamballe, has addressed a memoir to the Royal Academy of Medicine, containing a case where he tied the common carotid to cure an erectile tumour of the orbit, and also the result of his experiments on living animals, to determine the influence that ligature of both carotids would have upon them.

Ligature of the common carotid on either side does not stop the course of the blood through the ramifications of the tied artery; how then can it effect the cure of erectile tumours of the face and head? M. Jobert replies, 1st, By the sudden subtraction of a large quantity of blood from the tumour. 2, By giving an obstacle to the transmission of the impulse of the heart, in its full energy towards the tumour. He has convinced himself by his experiments, that beyond the ligature the blood runs in a continual jet, waving, and without jerk (*saccade*). His conclusions are, 1st, That erectile tumours of the orbit destroy the bones after the manner of aneurisms; 2d, They have the characters of aneurismal tumours, and are cured by ligature of the common carotid of the same side; 3d, The cure is not owing to obliteration of the artery beyond the ligature, but to diminished impulse of the column of blood arriving in the tumour; 4th, The vertebral arteries suffice for the cerebral circulation after ligature of the carotids; 5th, Dogs, sheep, and rabbits do not experience ill effects after this operation; 6th, Horses, on the contrary, do not survive it, dying with pulmonary apoplexies; 7th, Blood-lettings, before or after the ligature, diminish the intensity of the pulmonary lesions; 8th, Perhaps in man, the loss of a certain quantity of blood after the operation would have good affect.—*Rev. Méd.*, Sept. 1840.

MM. Bérard, Gimelle, and Larrey, who were appointed as a committee to examine the memoir of M. Jobert, consider it of importance, 1st, As adding two cases of cure of erectile tumours, one in the orbit by ligature of this carotid, to four other cases previously recorded; 2d, As the experiments prove the harmlessness of ligature of both carotids, in those animals whose vertebral arteries enter the cranium of a calibre sufficiently large to keep up the cerebral circulation and avoid pulmonary congestion; 3d, As it proves that the brain and the organs of the senses preserve their functions entire after this ligature; 4th, As it places beyond doubt that animals who, from their anatomical construction, survive the ligature of the common carotid arteries, are not affected with lesions of the organs of the senses as described by authors; 5th, As these experiments and their results will exercise a great influence on the surgical therapeutics of diseases, for the cure of which, li-

gature of the common carotids might be proposed.—*Ibid.* from *Bull. de l'Acad. Royale de Méd.*, Oct. 15 and 30, 1840.

SUPPOSED WOUND OF THE HEART, WITH CURE. BY M. HENRI.

On the 4th of December 1839, a young soldier belonging to the 4th Regiment of Artillery, while wishing to shew to one of his comrades the utility of a clasp knife as a means of defence when attacked, aimed a blow at him. It was made with such force, that the knife penetrated the chest. A large quantity of blood immediately flowed from the wound, and he fell to the ground insensible. His urine and fæces were passed involuntarily. He was taken to the hospital at Strasbourg. On his way he recovered his sensibility. The wound was situated about an inch below the left nipple, between the fourth and fifth ribs, and about a centimetre from the sternum. It was three centimetres in length, and parallel to the ribs. The countenance was pale and anxious, the lips bluish, with a contracted state of the features, cold extremities, slow and difficult respiration, and scarcely perceptible pulse. No air escaped from the wound, and there was no emphysema round it. He had spit no blood. The respiration anteriorly and laterally was healthy; percussion was duller, and to a greater extent than natural, in the precordial region. The sounds of the heart were obscure, and very feeble. The wound was brought together, a compress was placed over it, and fastened by a bandage put moderately tight round the chest. About four hours after his admission, the wound again began to bleed, occasioned probably by a fit of vomiting which he had. As long as he continued in the horizontal position, and perfectly quiet, there was merely a slight oozing of blood; but upon making the slightest exertion, as sitting up, it spirted out as if from a stop-cock, in a stream about the size of a thick pen, and with sufficient force to be carried to from ten to twelve centimetres from the chest. The wound was again closed, and venesection employed to the extent of 360 grammes. The anxiety and sense of suffocation of which he complained, were in some measure relieved by the bleeding. Warm poultices were applied to the feet. At eleven in the evening, the respiration having again become more difficult, he was bled to the extent of 180 grammes. Next day, the 5th, on account of the oppression at the chest continuing, he was bled five times; once to 500 grammes, thrice to 360, and once to 240, and he was cupped in the left loin, for pain felt in that region. On the 6th he was in a satisfactory state, having passed a quiet night. The oppression at the chest was hardly felt, but the pulse was quick and irregular, and the movements of the heart tumultuous. The poultices were continued to the feet, and he was ordered to be bled, twice to 240, and to 180 grammes. *7th.* Still continued doing well; respiration easy, but pulse quick; bled again to 300 grammes. *9th.* He was bled again to 150 grammes. The *bruit de râpe* was distinctly heard during the contraction of the ventricles; the movements of the heart were distant, obscure, and sometimes irregular. From this time he gradually improved. On the 1st of January he was allowed to sit up, and on the 15th he was dismissed cured. Cases of wounds of the heart, followed by cicatrization, are not very rare; but for the most part they have been only ascertained *by seeing the cicatrix on that organ*, on a post-mortem examination. The preceding case was verified during the life of the patient, and is of much greater importance than a mere anatomical fact. The energetic treatment employed, ought to be a model to be followed in all cases of the like.—*Annales de la Chir.*, Aug. 1841.

Summary of the Results recorded in a series of Lectures delivered at Sydenham College School of Medicine, on the Nature, Progress, and Treatment of Complicated Injuries of the Extremities, and on Amputation, and its Effects in Civil and Military Practice. By Rutherford Alcock, K.C.T., &c. &c. &c.

Towards the conclusion of his course on the above subjects, Mr Alcock devoted his two last lectures to a summary of the results already submitted to his class in a preceding part of his course. The lectures alluded to have been published in the Lancet for September 4th and 11th, and we have much pleasure in taking a few extracts from them.

He says, that the objects to be attained by amputation are, 1st, For deformity, (which is the smallest class). 2d, Amputation for chronic disease. 3d, Primary amputation. 4th, Intermediary amputation.—(The operation is performed in the intermediate period between the non-supervention of febrile action and its subsidence, usually shortly after the full establishment of the suppurative process). And 5th, Secondary amputation.—(After the febrile action first induced has subsided.) After detailing the results of severe complicated injuries of the extremities, and more especially those of M. Bilguer, the surgeon-general of the Prussian army, in 1762, who, in 816 gun-shot fractures of the extremities received into the hospital at one time under his charge, did not perform amputation in a single case, Mr Alcock comes to the following conclusion :—That the mortality of severe injuries of the extremities, whether in civil or military life, if treated, is rarely likely to be less than one-half, when upper and lower extremities are in about equal proportion. Not more than one-third are joint cases. In addition to this, a considerable number preserve only shattered and useless limbs. The loss of useful limb and of life, taken together, cannot be estimated at less than two-thirds of the whole number treated. If the average were applied to the upper extremity alone, the deaths would probably be 1 in 7 or 8 only ; but if to the lower, as much as 1 in 1·7. The result of not amputating is to alter the proportion of dead to the crippled, increasing the former, and by the same number diminishing the latter ; in addition to which, the maimed are left more or less suffering for life by the limb retained, in addition to the total loss of the use of the limb.

The mortality, whether in cases treated or amputated, depends greatly, 1st, On the site of injury, whether involving upper or lower extremity. 2d, On the nature of the injury, its degree and extent. 3d, On the nature of the external circumstances prevailing during the treatment of the case. In one series of 100 cases given of complicated injuries, the mortality was 1 in 2.9, or nearly one-third of the whole number. This average, although strictly correct, is yet entirely subject to a variety of conditions and proportions : thus, if the cases treated were all wounds involving joints of the same relative number of upper and lower extremity, and treated under the same circumstances, the proportionate mortality would be 1 in 1.4

If all were fractures in the same manner, with the single difference of not involving joints, - - - - - 1 in 4.4

Instead of two-thirds, less than one-fourth perish. Again :

If all the injuries were of the upper extremity, similar in their degree, and other circumstances, (one-third being of joints), the mortality would be - - - - - 1 in 7.7

If all of the lower extremity, (one-half joint cases), - 1 in 1.7

If, on the other hand, all were injuries of joints in the upper extremity, - - - - - - - 1 in 4.3

If all were fractures, without injury to joints, - - 1 in 9.7

If all were of the lower extremity, and injuries of joints, - 1 in 1.1

If all were fractures, without injury to joints, - - 1 in 2.4

Nothing can be more palpable, striking, or obvious, than the modifications in the results induced by site, and this one distinction in the nature of wounds, viz. whether implicating an articulation or not. The same striking difference is seen, whether cases are treated in favourable or unfavourable circumstances.

In favourable cases for treatment, the attempt to conduct them to a cure with the view of saving a useful limb, is always to be attempted, wherever the injury be situated, whatever its description, or the nature of the external circumstances. In doubtful cases, the nature of the external circumstances, and the site of the injury, when chances of cure and danger of failure are equal, as regards the nature and extent of the injury, decide the question; if situated above the knee, and the external circumstances are unfavourable, the balance is by those two conditions turned against the patient; and if treatment be undertaken, it should be with this knowledge, and not at the recommendation of the surgeon, as calculated to save a useful limb. In cases unfavourable for treatment, wherever the injury be situated, and whatever be the condition of external circumstances, only one of two results is to be expected—the death of the patient, or the loss of the limb, by subsequent disease, or by amputation. The broken-down invalids who occasionally escape death, still retain a useless limb.

In reference to the nature of the diseased actions producing death, and after particularizing the cause of death of each fatal case, he says, that the mortality was caused in more than half the fatal cases by actions leaving no trace of structural change or physical lesion, by deleterious impressions made on the nervous centres, disordering the circulation, and deranging the vital functions. In the remainder of the fatal cases, the same influences were sufficiently manifest, although in a less striking manner, since they were accompanied with lesions of structure, local and organic, chiefly secondary diseases, involving distant parts, and often important organs, in suppurative and inflammatory actions, sufficient to account for the death of the patient.

When the causes of death were compared with the causes of amputation, *both in reference to the site of the injury* as regards the upper and lower extremity, we found that more than one-third of the amputations of the lower extremity are performed to anticipate the full development of actions, the fatal consequences of which could not be doubted. In one instance only was this done in the fore-arm and hand, indicating that much more may be adventured in injuries of the latter during the first periods. Secondary hemorrhages, however, preponderate in the fore-arm, wrist, and hand, as three to one. Sloughing and gangrenous action appear in both, but mortification of the extremity of the member in the lower extremity only. A sloughing action was developed in three of the upper extremity. Specific causes preponderate in fracture not involving joints, more than in injuries of joints, both in the upper and lower extremity.

After mentioning the different results of primary and secondary amputation in civil and military hospitals, as taken from the record of amputations in the Glasgow Infirmary, by Dr Laurie; from the Reports of the Massachussets hospital, by Dr Hayward; from the Pensylvania one, by Dr Norris; from the report of Mr Guthrie after the battle of Toulouse, and from his own experience, he comes to the following conclusions:—

1*st*, That the most successful amputations, both in civil and military hospitals, are those for chronic local disease.

2*d*, Primary amputations for injuries of military life.

3*d*, Secondary amputations for injuries of civil life.

4*th*, Primary amputations for injuries of civil life.

5*th*, Secondary amputations for injuries of military life.

The following are the conclusions on the relative advantages of primary and secondary amputation for the injuries of civil and military life:—

1*st*, Between the injuries usually received into civil hospitals, of a natuie

to require amputation, and those occasioned by the casualties of the field, an essential difference exists, exercising a most important influence upon the progress of the case, and the results of amputation.

2d, This difference consists chiefly in the greater shock, moral and physical, generally caused by the *infliction of the injury* in civil life, from which the patient does not sufficiently recover in the first twenty-four hours, to bear the shock of an amputation; hence is this first period less favourable for the operation than one more remote, when the alarm has ceased, the febrile action had time to develope, and to be finally relieved by the suppurative process.

3d, In proportion as this first shock or alarm is great in the injuries of military life, are the results produced the same. Hence amputations for wounds from cannon-shot and shells more nearly approach in their effects to the injuries of civil life. It follows that it may often happen in military practice, that the system is not seriously implicated within the first few hours, and amputation may be advantageously performed; while in those of civil life, amputation within twenty-four hours adds a second violent shock to the nervous system generally, while the patient is still under a strong deleterious action from the first; and the result is either death by shock, or by the development of violent febrile action, by phlebitis, secondary inflammations, tetanus, gangrene, &c.

4th, Extensive experience proves, that wherever violent commotion has been sustained, deeply involving the nervous centres, and the *morale* of the patient, the operation is better borne after the suppurative process is established. In gun-shot injuries, however, where the whole of the structures of a limb are involved by the lacerating course of the ball, and the excessive comminution of bone, added to the jar or shock communicated by the crushing force of the ball in contact, a more fatal and extensive action is developed, leading to greater irritation and exhaustion in the system than the ordinary injuries of civil life; thus operation in a subsequent period proves less successful than when performed in civil hospitals.

5th, The result of amputations performed for long-existing disease of a limb, often after exhausting suppuration has been long continued, the patient emaciated and greatly debilitated, proves incontrovertibly that this is not an unfavourable state for the success of amputation,—the supervening actions are generally less fatal in character, less violent in their development.

I cannot conclude, he says, without expressing an earnest hope, that the profession generally, and more especially hospital surgeons, whose opportunities in all countries are great, of making extended observations, and of collecting the most accurate records of a large number of cases, may be induced carefully to reconsider the grounds on which the prevailing doctrines, in reference to the treatment of complicated injuries of the extremities, and the expediency of amputation at different periods in civil and military life, are founded; that they will put them to the tests obtained by the analysis of the results of large numbers of cases. The united labours of hospital surgeons and others, to thoroughly investigate the subject upon their accumulated records, would soon remove all inconsistency and contradiction between the doctrines and effects, and leave no room for further doubt as to the true principles of the most successful practice.

[As it is impossible to do justice to this pamphlet of Mr Alcock's, where there are so many tables of figures, without enlarging very much our extracts from it, which want of room will prevent us from doing, we would recommend to such of our readers as take an interest in the subject, to peruse the original itself, as given in the *Lancets* of the 4th and 6th September last.]

On Wounds of the Femoral Vein in Operations for Aneurism. By Mr Hadwen.

This is one of the most melancholy accidents which can happen, in the operations on this artery; and it may occur in the hands of the most skilful operator, as well as in those of the unskilful. There is scarcely an instance on record of the patient's recovery in cases where the vein has been wounded. Mr H. thinks that the fatal results are not owing to the wound of the vein, but to the ligature which is applied to the artery, including a part of the vein. He has seen the internal jugular wounded in an operation on the neck, where, although the hemorrhage was great, yet it ceased immediately when the operation was finished, and the parts had regained their natural relations. He takes for granted that simple wounds of veins, as a general rule, both superficial and deep, properly treated, are unattended by danger. It is quite unjustifiable, he thinks, to tie the artery at the place where the vein has been injured; and the practice that he would adopt in such a case is, to open the sheath of the vessels an inch above the injury of the vein, and tie the artery there, provided there should appear sufficient room between the wound and the deep artery of the thigh, to justify its application; if not, to go the same distance, or more, below. If the aneurism is in a state which admits of the necessary delay, it becomes an inquiry, whether it might not be better practice to allow the wound entirely to heal before the artery is exposed a second time. The only recommendation this course appears to present is, the entire cessation of inflammatory action it would admit of in the vein, before the possibility of fresh disturbance could arise from the ligature. On the other hand, we must bear in mind the effect of a failure and second operation on the patient. These are circumstances, however, which each individual case and operation must determine. Future experience, he says, may decide whether the safest plan would be to pursue the treatment about to be mentioned; but at present, he is not prepared to give it unqualified recommendation. In a case of operation on this artery, at which he was present, and where the femoral vein was wounded, he urged that the ligature on the artery should only be allowed to remain a sufficient time to give the artery a fair chance of being obliterated, and then to remove it. His advice was adopted; and in a fortnight the wound was quite healed, and the patient in perfect health. It would be difficult, he says, perhaps impossible, to collect, from a single instance, stronger support for the position he has assumed, than this case.—Abridged from *Lond. Med. Gazette*, April 9, 1841.

Case of Compound Fracture, and Prosecution for Mal-Practice, in New York.

On the 4th of July 1839, A. Smith, aged 50, of intemperate habits, fell from a building, and fractured his leg. Both bones were broken, the fibula about four, and the tibia about two inches, above the ankle joint. There was a laceration of the soft parts, four inches long, on the inside of the leg, through which the tibia protruded. The extreme end of the bone was denuded of its periosteum, perhaps 1·4 of an inch. None of the important vessels or nerves were injured. A small spicula of loose bone was removed from the wound with the fingers. No dirt or foreign bodies were in the wound, nor was there any considerable hemorrhage. Dr Shipman was sent for, who put the bones in apposition, and brought the wound together by adhesive strap. Scuttetus' bandage (the many-tailed one) was applied, with two long splints, extending from above the knee to below the ankle, with another short one in front of the leg. These were secured by tapes, and the leg extended on a pillow, with directions to keep it moist with cold spirits

and water. On the next day, he was removed to the alms-house, where the leg was still in a proper position. He then came under the care of Drs Goodyear and Hyde. Dr Shipman saw nothing more of the patient until the 13th, when he was requested to go to the alms-house, and amputate, or assist in amputating, Smith's leg. A consultation was held, at which a good many medical men were present. The patient was in the following condition. His leg lay over the double inclined plane, the bone protruding through the wound nearly two inches. It was dry and dark, and had lost its vitality. The foot was turned off, and the leg distorted with retraction of the muscles and shortening of the limb. The leg was swollen and inflamed nearly to the knee; the wound gaped, but there was no loss of substance. Upper part of the wound had healed, and healthy granulations covered a portion of the bone. Some pus, of good quality, issued from beneath the bone. The patient suffered much pain, but was free from fever; appetite, strength, and pulse good; tongue clean; and bowels regular. Drs Goodyear and Hyde urged the necessity of immediate amputation; and the reasons they assigned were, the age, habits, constitution of the patient, state of the weather, and apprehensions of fever. Dr S. and others thought that it was unnecessary, as there were neither local nor constitutional symptoms demanding it; but they recommended the removal of the dead portion of bone, which offered an obstacle to the reduction of the fracture,—that the limb should be placed in a proper position, so that the fibula might unite, and thus assist in keeping the leg steady, until union took place in the tibia. Drs G. and H. did not follow the advice of Dr Shipman. In ten days after this, Dr S. was again sent for, as the patient had been allowed by the superintendent of the alms-house to put himself under the care of Dr Shipman. Upon Dr S.'s arrival, the leg was in the same state as that already described, with the exception of a slough upon the heel, from pressure on the inclined plane. A dead portion of the tibia, to the extent of about an inch, was removed by the saw, and the bones placed in apposition, and splints applied. The wound was cleaned from pus and maggots, and the edges brought together by adhesive strap. The heel was dressed. From this time all went on well. He remained in the alms-house during winter, but in spring he left, and engaged in labour. His leg has become strong, and he walks without difficulty, and without much lameness.

Such is a short history of the case, for which Smith raised a suit for malpractice against Drs Goodyear and Hyde.—*From a pamphlet containing a statement of the case, published by Dr Shipman.* New York, 1841.

Large Tumours.

An operation was, in 1841, performed in the Hôtel-Dieu, at Paris, by M. Roux, for osteo-medullary sarcoma of the thigh, which had attained an enormous magnitude. The disease was of six months' standing; and the following were its dimensions, on the patient's admission into the hospital. Circumference of the tumour round its middle, 27½ inches; round its upper part, 25½; round its lower part, 30. The tumour weighed 25 lbs. The patient died 8 days after the amputation.—Abridged from *Gazette Méd. de Paris*, 27th Nov. 1841.

[A fibrous tumour was removed from the humerus by Mr Syme, measuring, in a horizontal direction, 24$\frac{7}{10}$th inches, and in a perpendicular, 26$\frac{9}{10}$th inches. It is as large in proportion as that cut out by M. Roux, considering that the latter was taken from the thigh, even making allowance for the difference between French and English inches. The preparation is in the Museum of the Royal College of Surgeons of Edinburgh.]

ON THE RADICAL CURE OF INGUINAL HERNIA, BY THE METHODS OF MM. WUTZER, SEUTIN, AND SOTTEAU.

The object proposed by these gentlemen is to procure obliteration of the inguinal canal, by invaginating and causing strangulation of a portion of the superincumbent integuments. As the difference between their respective methods is so trifling, and consists more in a modification of the instruments employed, than in the operation itself, we shall confine ourselves to state briefly the mode followed by M. Wutzer. The instrument that he has invented for the operation is called *celekleison*, and it is used in the following manner. The skin of the scrotum is pushed upwards into the inguinal canal by the finger, taking care to keep the cord between its dorsal aspect and the posterior wall of the canal. The instrument, which consists of a hollow piece of ebony, is then passed along the finger. Near the extremity of the celekleison, is a hole giving exit to a needle, which is made to pierce the integuments. The point is received into another hollow piece of wood, and the two are united by means of a vice; pressure is thus kept up, but in such a way, that it is greatest at the point where the needle pierces the skin. The instrument is kept applied for six or seven days, and when it is removed, the integuments are in a state of gangrene. During the separation of the slough, and the subsequent healing of the wound, the canal becomes obliterated. A considerable number of cases are reported; in some, the herniæ had returned before the patients left the hospital; and in others, reported as cured, the herniæ were found converted from oblique to direct. In five cases, where this operation was performed by M. Latens, there was one death, and not a single cure. The pain attending the operation is great, and it has been followed by erysipelas, phlegmons, purulent collections, and in one case by atrophy of the testicle. In fact, the want of success has been such, that we think it unnecessary to enter more into the details of this operation.—Abridged from *L'Examinateur Méd.*, Nov. 28, 1841.

ON THE TREATMENT OF ERECTILE TUMOURS. BY M. A. BERARD, Surgeon to the Hôpital Necker.

Under the name of tumour of the erectile tissue, M. Bérard says, that surgeons are in the habit of designating several formations, both accidental and congenital. There are three varieties,—first, when the capillaries of the skin are the seat of the disease; second, when the venules of the cellular tissue are affected; and third, the morbid product formed by a dilatation of all the arterial branches of any part. The first variety is generally observed a few days after birth, and is frequently mistaken for a flea-bite. Its colour is of a bright red, and becomes of a deeper tint when the child cries. It has been said that these tumours have a pulsation isochronous with that of the heart, but M. B. has seldom observed this, and when there is an apparent impulse given to the finger, he is of opinion, that it is owing, most probably, to some artery lying beneath the tumour. This form does not always go on increasing in size; it may remain stationary for years, and then recommence its growth without any evident cause. It frequently ulcerates; sometimes the child may lose a considerable quantity of blood, but in general only a very small quantity escapes. As the ulceration extends, the vessels become obliterated, and a cure is effected. It is said that the vessels sometimes become obliterated without any ulceration taking place. It is principally found on the head, but is also seen in every other region of the body. When several exist at the same time, one of them is generally situated on the head. The second variety, or the venous erectile tumour, occurs either at or some time after birth, and is always found in the cellular tissue. It is of a blueish colour, and, like the former, is met with most frequently on the head and face; it

also attacks the tongue and other parts of the oral cavity. When situated on the cheeks or lips, the whole thickness of these parts is destroyed and replaced by the morbid tissue. It enlarges on any effort requiring the use of the part being made, but when it has attained a certain size, it does not seem in general to acquire by these any permanent increase of volume, as M. Bérard has known a glass-blower affected with this disease in his lip, where it remained stationary during many years. It is less subject than the capillary tumours to undergo a spontaneous cure by ulceration. If it does ulcerate, the hemorrhage is much more copious. As the third variety, or that which arises from dilatation of all the arterial branches of a part is not embraced, he says, by his subject, he does not enter into any description of it. After enumerating the different kinds of treatment had recourse to for this disease, such as ligature, excision, seton, caustic, acupuncture, vaccination, &c., he says that he has tried several of them, and that he has found the *caustique de Vienne*, (a mixture of lime and caustic potash), the most successful, but that it does not do to give the preference in all cases to the same remedy. It is necessary to bear in mind that erectile tumours are cured in two ways, viz. either by destroying the accidental tissue, or by modifying its organization, and converting it into a cellulo-fibrous texture. In some cases both methods are employed. The first is used principally in superficial and capillary tumours, and where the destruction of the part is not followed by any deformity; the second and third, chiefly in those of great extent and depth. The great advantage of the caustic of Vienna is its rapidity of action, and the facility we have of regulating the extent and depth of the slough formed by it. The following is the mode in which the *caustique de Vienne* is applied. It is made into a soft paste with alcohol, and then spread over the tumour by means of a spatula. Some surgeons recommend the tumour to be surrounded by adhesive plaster. M. Bérard is against this method, from the circumstance of more skin being sometimes destroyed than was intended, by the caustic getting under the plaster and committing its ravages unknown to the operator. It is kept on for five or six minutes, and then washed off with vinegar and water. The acetic acid of the vinegar combines with the alkaline bases of the paste, and forms the acetates of lime and potass, which have no action on the skin. He has never seen any hemorrhage at all alarming take place, either on removing the caustic, or on the separation of its slough. It is necessary occasionally to apply the caustic more than once. He has given several cases of cure by this mode of treatment, but as there is nothing remarkable in them, it is unnecessary for us to give an abstract of them. Several others are mentioned, in which needles were inserted into the tumours, but in none did they of themselves effect a cure. In four cases, after the needles had been applied, an injection of the nitrate of mercury was thrown into the holes made by the needles. In the whole of these gangrene to a greater or less extent took place, followed in some of them, by severe constitutional disturbance. A cure was accomplished in them all; but in two, (the upper lip was the seat of the disease in the four) from the large size of the tumour a part of the hypertrophied structure was obliged to be removed from the inner surface of the lip. When he has recourse to setons, he recommends a considerable number to be passed, and when suppuration has fairly commenced, as at the end of the third day, that each adjoining two should be tied together, and the knot gradually tightened, from day to day, by means of a piece of wood or ivory. —Abridged from *Gazette Méd. de Paris*, Oct. 30, 1841.

Polypi of the Rectum in Children.

Professor Stolz has published in the Gazette Médicale of Strasbourg, a pamphlet on polypi of the rectum in children. This disease, he says, occurs from time to time, and has almost never been taken notice of by any of those

authors who have written on diseases of children, having been taken for a prolapsus of the gut. The case which first occurred to him was in a boy five years old, and presented the following symptoms :—For eighteen months he had had frequent desire to go to stool; and for a year, at each time that he went, he had passed a red and bloody tumour, which in about five or ten minutes returned of itself. His parents, and several medical men who were consulted, believed that he laboured under a prolapsus of the rectum. Professor Stolz at first was of the same opinion, and various injections were accordingly ordered. After several weeks, upon examining him minutely, he discovered, that it was not a prolapsus, but a tumour of the size of a small nut, and covered with a bloody mucus, which was protruded. It was attached not very high up the gut, by a pedicle of about the thickness of two millimetres, to the mucous membrane of the rectum. A ligature of silk was accordingly put round it and tied. In three days it came away; no bad symptoms followed, and the child, who had been in bad health previously, from loss of blood, soon recovered his strength. Two other cases have occurred to the Professor since, and he has heard from his colleagues of several more. In one of the cases which he had, he removed the tumour by means of scissors. No blood followed at the time; but in about two hours after there was copious hemorrhage, which put his patient's life in danger. The bleeding was arrested by compresses dipped in cold water, and by cold injections. The child made a good recovery, and soon regained his strength.

This last case is another example of the danger of making any incision in the rectum, or even in its neighbourhood, without carefully plugging the wound afterwards.—Abridged from *Journ. de Méd. et de Chirurgie Pratiques*, March 1841.

On the Section of the Lingual Nerves for the Cure of Stammering.

M. Philips has published the following case in the Gazette des Hôpitaux. Being of opinion that the success of Dieffenbach's operation for stammering was owing, not to the loss of substance of the tongue itself, but to the division of the hypoglossal nerve, he determined to try the section of this nerve, which he did in the following case with success. The patient being seated, the mouth was opened wide, and the tongue protruded, which was seized with a pair of forceps and raised. An incision was then made into the blue line, which appears to separate the tongue from the inferior part of the mouth. The ranine vein was avoided, and the edges of the wound were kept separate by hooks. Upon the wound being sponged the nerve was seen; it was raised on a blunt hook and divided. The other nerve was then sought for, and cut in the same manner. Great pain was felt when the section was made: there was almost no bleeding. A considerable quantity of mucus was secreted after the operation, and the patient was able to speak without stammering. A month after the division of the nerves, the cure was still complete.—Abridged from *Journ. de Méd. et de Chir. Prat.*, Oct. 1841.

On the Utility of Opening the Ranine Veins in Inflammatory Affections of the Throat. By Dr Renond.

In the Periscope of our number for November, there is a notice of the great utility to be derived from local phlebotomy in some diseases. Dr Renond has sent a letter to the Editor of the Journ. de Méd. et de Chir. Prat., in which he mentions, that he has derived very great benefit from opening the ranine veins in inflammatory affections of the throat, and more especially of the tonsils. He advocates this treatment for two reasons: 1st, For the greater benefit derived from the venesection, than from the application of leeches; and, 2d, From the economy of the practice. An ounce of blood obtained from these veins, is equal to four from any other part.

MIDWIFERY.

Case of Extra-Uterine Conception. By P. Fairbairn, M.D.

Mrs R., aged 37, of fair complexion, was believed to have conceived for the third time about the middle of June 1841. She had been seven and a half years married, and five years had elapsed since the birth of her last infant. From the time at which the symptoms indicating conception had taken place, the ailments incident to that situation were much less troublesome than during the two former pregnancies. She was, indeed, in the habit of taking a great deal of exercise, without fatigue or the smallest inconvenience. On one occasion, however, she expressed to a near relative the belief that there was certainly something unusual in her situation, although, on being asked her reasons, she could not specify any thing particular in her sensations to justify this inference.

From the 24th of May until the 24th of August, she resided at Portobello, and was in the habit of bathing regularly in the sea every other day. This practice was continued until about the 17th of August, when on that day, the tide being very far back, she was alarmed by the bathing machine being rapidly driven into the water; and she experienced considerable uneasiness from the jolting motion. She bathed, notwithstanding, herself as well as her two little boys as usual. On returning home, she felt herself very unwell from pain in the back and right iliac region; there was slight uterine irritation with sanguineous discharge, and a feeling as she would part with the fœtus. Rest in the horizontal posture, cold applications to the external parts, and light cooling diet, were suggested by a female friend. Next day she felt so well as to be able to leave her apartment. Two or three days after this, having eaten a few cherries, and indulged rather freely in butter-milk, she suffered from an attack of diarrhœa, with slight abdominal pain. There was likewise irritation of the bladder and rectum, and a discharge of blood from the latter, which was supposed to proceed from internal hemorrhoids, to which she was liable. Rest for a very short time, a dose of castor-oil with laudanum, followed by a diuretic, afforded complete relief. During her stay at the sea-side no professional person was consulted.

On the 1st of September, I was requested to visit her in town for the first time. She was in bed, and complained of occasional spasmodic pains over the abdomen, with a degree of fullness and tenderness in the uterine region. There was sickness, bilious vomiting, and foul tongue, with slight febrile excitement. These symptoms were attributed to her having eaten a few plums, and taken a draught of porter the previous evening. She likewise suffered from irritation in the bladder and rectum, with a considerable discharge of coagulated blood from the bowels. I was informed that she was about the third month of pregnancy. My object in the treatment was to allay the irritability of the stomach by saline draughts, with opiates and anodyne frictions; afterwards to administer laxatives and diuretics with opiate enemata. These means in a few days completely answered the purpose, and on the 6th she felt herself so well as to engage in her usual avocations.

I was summoned again on Monday the 13th, in consequence of slight sanguineous discharge *per vaginam*, painful micturition, tormina, and tenesmus, with a feeling of bearing-down efforts. On examination *per vaginam*, the *os uteri* was felt perfectly natural, but nothing like distinct labour-pains; the uterus was evidently enlarged, and there was a slight discharge of muco-sanguineous fluid. As the bowels had been opened by a laxative, an opiate enema was administered, followed by a full dose of the spirit of nitrous ether, and cold applications to the external parts. The urgent symptoms

having been allayed, and the discharge checked, I discontinued my visits until Friday the 17th September. On that day, on being shown into the dining-room, where my patient was, she expressed her surprise at my visit, appeared cheerful, said she was quite well excepting a little debility, and informed me that she could now dispense with my services. Before taking leave, however, she told me that, when in bed, she occasionally felt in the right iliac region, exactly in the site of the *caput cæcum coli*, some pain, which disappeared on change of position. On applying pressure, she experienced no pain. Supposing that it might be connected with derangement of the bowels, I requested her to take a dose of laxative medicine, and to repeat it as occasion might require, and to inform me if she had any return, or felt any unusual sensation when in bed.

On Sunday the 19th, about half-past 2 P.M., a hurried message was brought me, stating that Mrs R. was taken dangerously ill, and requesting my immediate attendance. On entering the house, I was met by her husband, who informed me that he believed his lady was dying; that about half-past 2 o'clock P.M. she had fainted in the arms of the servant, from a sudden attack of pain across the lower part of the abdomen, whilst in the act of going from her bed-room into the dining-room; and regretted, that he and the other members of the family were all at church when the accident happened. I was informed likewise, that she was perfectly well and in good spirits between the forenoon and afternoon services: but her brother had remarked, that her countenance looked somewhat pale, and her hand felt cold in the forenoon. On going to her bedside, I was shocked at her ghastly appearance; her face was deadly pale, with a constant feeling of sinking; the pupils were contracted and inanimate; the body and extremities covered with a cold clammy perspiration; the heart beating rapidly and tumultuously; and no pulse was perceptible at the wrist, nor in the humoral artery. The patient suffered from distressing sickness, with occasional attempts to vomit. The abdomen was tumid, and somewhat tender on pressure, and across the epigastrium the swelling was slightly tympanitic. On examination *per vaginam*, the *os uteri* was felt perfectly natural, but there was no sanguineous discharge. She was perfectly sensible, and answered questions distinctly.

I ordered immediately a wine-glass of brandy with warm water and sugar to be given in repeated doses, and to be renewed as occasion might require. Afterwards a tea-spoonful of the aromatic spirit of ammonia in water was administered. Bottles of warm water and warm flannels were applied to the body and extremities, and replaced from time to time. The pulse after some time was felt. It could be counted ranging from 120 and upwards; it soon, however, again became imperceptible. Although there was some appearance of reaction, yet the heat of the body could not be restored. Six P.M. had a consultation with Drs Davidson and Newbigging. Her situation was considered most alarming. We were of opinion that her disease must be either a case of abdominal aneurism, rupture of the stomach, or extra-uterine conception; and, in justice to Dr Davidson, I must candidly declare, that he certainly had the merit of suggesting the last, which turned out to be correct. The practice to be pursued was abundantly evident, viz. to support the powers of life. With this view, the stimulants, as ordered, were to be continued to the extent of a table-spoonful of brandy every half hour, occasionally intervening a dose of the ammonia; and the warm applications to be diligently renewed. After Dr Davidson left us, she became more restless, tossing her arms from under the bed-clothes, and now and then attempting to turn or raise herself in bed. She complained of pain sometimes between the shoulders, or at the *scrobiculus cordis*, and occasionally over the abdomen, with sickness and frequent belchings. She stated that she felt a rushing sensation in the abdomen, as if from the escape of a fluid, and expressed her belief that she was dying. A cloth applied to the external parts was slightly stained with blood. Mustard sinapisms and a

bag of hot salt were had recourse to with the view of relieving the pains, but without effect.

Seven P.M. Had a second consultation. The symptoms were then greatly aggravated, and to all appearance she was rapidly sinking. Her breathing was much oppressed; she lay upon the back, occasionally moaning, in a complete state of collapse, deadly pale, cold, covered with clammy perspiration, and perfectly pulseless. She was sensible, however, and answered questions distinctly. An enema of brandy and warm water with twenty drops of laudanum was administered, whilst the stimulants by the mouth were repeated as often as possible.

Some short time before her death she was calm, the breathing slow and heavy. At length, however, she became unconscious of surrounding objects, and about 8 o'clock P.M. expired, exactly five hours and a half from the fatal attack.

Sectio cadaveris, 19 hours after death, in presence of Drs Davidson and Newbigging, Sir William Newbigging, and Alexander Ziegler, Esq., surgeon.—The external surface of the body was pale. The features were sharp and shrunk, whilst the integuments covering the face were pitted, giving the appearance of the remains of small-pox, although in life perfectly smooth. On cutting into the abdomen and reflecting its parietes, a large quantity of dark fluid and coagulated blood (not less than six pounds) occupied the lower regions of the belly, and entered between the folds of the intestines, covering at the same time the bladder, uterus, and its appendages. The blood was carefully removed with a sponge and the fingers, when a tumour of an oblong, roundish, uneven and nodulated form, somewhat larger than the fist, presented. It lay exactly over the bladder, and inclined a little to the left iliac fossa. The sac by which it was enveloped was of different degrees of thickness; in some parts, it was firm, solid, and of a fleshy consistence; whilst in others, it was thin, delicate, and pellucid, thereby enabling us to get a view of the outline of the extremities of a fœtus. Near to and running parallel with the Fallopian tube, and between the folds of the *ligamentum latum*, there was an angular pouch filled with bloody serum and mixed with coagula. On raising the tumour cautiously, it was found to be connected with the left Fallopian tube, whilst the uterus was seen in its natural situation between the bladder and rectum. No doubt now remained that it was a case of extra-uterine conception; and in order to examine the parts minutely, the friends kindly permitted us to remove them from the body.

The parts being removed, an incision was made along the posterior surface of the tumour, and a male fœtus about the third month brought into view. The head occupied the lower part of the tumour, and the back presented towards the left side. The placenta was attached to the superior and anterior part of the sac, and received maternal blood by means of vessels which passed into it along the upper part of the broad ligament near the external extremity of the Fallopian tube. The placenta, amnion, and chorion, were all perfectly natural. Between the placenta and membranes of the ovum and sac, there was distinctly traced a strong, firm tunic, about one line in thickness, and of a reddish-brown colour, surrounding the fœtus; exterior to this was another membrane of a fine delicate texture and bluish colour, resembling the arachnoid. The latter was probably of adventitious formation.

The sac containing the ovum appeared to be formed, partly by the fimbriæ of the Fallopian tube stretching over the tumour, partly by layers of the *ligamentum latum* running anteriorly and posteriorly, and partly by adventitious membrane, the result of inflammation in the process of the fœtal development. All these different structures could be satisfactorily traced.

In regard, however, to the ovum being situated within the layers of the *ligamentum latum*, there could be no doubt. It is difficult, perhaps, to conceive how that happened, except by supposing either that it had pushed the

membrane before it, or that a portion of the ligament had been removed by absorption, and the ovum, as it became gradually developed, insinuated itself between the folds of the membrane.

The placenta was partially detached from the membrane, as formerly described, surrounding the ovum by a mass of semifluid blood, evidently the result of the fatal rupture. In addition to this, the chorion was separated from the peculiar membrane more or less extensively, by masses of decolorized blood, producing the peculiar nodulated appearance of the tumour. These nodulated masses of blood were evidently the product of repeated effusions, and, upon the whole, had more or less the appearance of what is observed in aneurismal tumours. The fatal hemorrhage was produced by two extensive ruptures, the largest of which was placed on the anterior surface of the tumour, and contained a portion of the placenta protruding through it; and the other upon that part of the tumour opposed to the uterus.

The left Fallopian tube measured four inches in length; it was quite pervious throughout, but the abdominal extremity of it for about one inch and a-half was considerably dilated. The upper part of the fimbriated margin was sufficiently distinct for some way over the tumour; the lower part was not visible, having apparently become incorporated with the walls of the sac. The left ovary was natural, and perfectly free from the tumour, and contained a well-defined *corpus luteum*. The right ovary was enlarged and indurated, and on being opened, presented a spongy, mammary-looking structure, of rather a malignant character; but the Graafian vesicles and blood-vessels appeared natural. The Fallopian tube was twisted and adherent to it and the neighbouring parts.

It is probable that these changes of structure were the result of previous inflammatory action.

The measurement of the uterus was as follows, viz. five inches in length, from the centre of the fundus to the edge of the anterior lip; three inches and a quarter in breadth between the attachments of the round ligaments, rather more than half an inch in thickness of the walls. In fine, the uterus presented all the appearances of a uterus from the eighth to the tenth week of pregnancy. On laying it open anteriorly by a longitudinal incision, it was found to contain a thick spongy decidua, which was chiefly attached to the fundus, and occupied the whole of the uterine cavity, and was seen to project slightly within the uterine extremity of the left Fallopian tube. The *os uteri* presented a natural appearance, and was filled up by the usual gelatinous plug.

The parts were carefully dissected and examined by Dr Reid of the Royal Infirmary, and Mr Goodsir, Conservator of the Museum of the Royal College of Surgeons, to whom I am much indebted.—*Edin. Med. and Surg. Journ.*, Jan. 1842.

A TREATISE ON MIDWIFERY. A New Edition, Published in the 5th year of Taou Kwong (1825.) Translated from the Chinese, by W. LOCKHART, Esq., M.D.

The treatise the title of which is prefixed, commences with seven prefatory remarks on the subject of parturition. In his third, the author excuses himself for the comparatively low and vulgar style in which it is written, on the ground that it was intended for all ranks, and therefore required to be in very plain language. He says, "not only should all pregnant women be made acquainted with this publication, but all, whether old or young, male or female, should render themselves familiar with its contents; for it is much better to attend to that which is useful, than to be occupied with silly plays or foolish novels." He particularly recommends his book to the rich, who, he says, are proud and will not listen to advice, so that when such an

event as that now spoken of comes suddenly upon them, they cannot remain quiet, but light candles and kindle fires, and shout and make a great noise, so that in many cases both child and mother are lost. The great energy of nature is called life, and is apparent everywhere; it is most strikingly displayed in giving life to man. We often hear of difficult labours which are laid down in the present age to the fault of nature. The passing into life is as pontaneous operation of nature; and seeing that man is the most intelligent being in creation, how can we suppose that he should be inferior to other created beings? Now other things are produced without difficulty; hence herbs and plants bud in their proper season, and the chick leaves its shell at the proper time;—what occasion is there for aid being given? Can it be that nature should slay men in the very gate of life? It is manifestly impossible. These processes are entirely spontaneous, and the application of force is in no case called for; why then should the human species alone be an exception to this rule? All that he wishes to enforce is, that men would implicitly follow nature, and not interfere with her operations by useless meddling, so that in every case that presents itself, life might be preserved. Six characters comprise the whole of parturition: sleep, bear the pains, slowly come to the tub. When first the pains in the womb are felt, the woman must resolutely make up her mind, and understand that the circumstances in the birth of man have a certain fixed rule; that this birth is a simple matter, and not to be dreaded: that no one can take her place: that her own life may depend on the issue; and that it does not concern others to the amount of a single hair. After mentioning that when the pains are unfrequent, they are mere trial pains, and that she may eat her rice as usual during their intermission, he inculcates the necessity of not taking her too soon to the tub, even after the true bearing pains have come on,* and that she must not use efforts. Still he says, there is a time when it is proper to make a slight effort, and then one exertion will be sufficient to cause the fœtus to lose its place and descend. Thus, at the set time the melon ripens, and the tendril breaks. At this period the blood and breath are dissipated (partial recovery), the bones and joints of the body are loosened for a moment, a gush of water takes place, and without effort the child is born, and the mother herself does not know how it came about. Some say, that as we make an effort in passing an evacuation from the bowels, why not do the same in labour? But these do not consider that the feces are mere dead matter, and therefore an effort is required, but the fœtus is able to turn itself, and the time that it does so must be waited for; not only is the use of effort needless, but it is absolutely injurious; for the fœtus sits upright in the womb till the time of birth, when it bends down its head, and turns its body towards the contracted opening of the womb patiently, till it turns its body to the gate of life, the head being then below and the feet above. If the fœtus has not yet turned its body, and efforts be made to expel it, then the feet will come out first; this is a strange occurrence, and an elegant name is given to it, viz. "the foot-treading, or water-lily birth." If the turning of the body be not quite complete, a hand will come out first, and this is called the "begging-salt birth." If efforts are made, they must only continue the length of time required to drink a cup of tea. The precise time to bring the woman to the tub is, when the evacuations are passed involuntarily, and when she has scintillations, as of golden flowers, before her eyes. Some say we cannot wholly credit the idea of the child being able to come out of itself. What was the opinion of the ancients on the matter? Let the quotation of the four following words be observed, "melon, ripe;—tendril, break:" and then it will be seen that the fœtus can work itself out. The

* According to Chinese usage, when the strong bearing pains come on, the woman is supported in a half reclining posture, and a tub or deep wooden platter is so placed as to receive the child on its expulsion.

ancients speak of a pregnancy that was protracted for three or four years, and afterwards the child was born; and this was because the fœtus was not willing to work itself out, and who could then constrain it to come out? and, on the contrary, when it chooses to come out, who can hinder it? The other four characters, "pull, stalk (of grain), increase, growth," will show how great is the evil of mistaking the trial pains for the true bearing pains, (that is, of hurrying the labour.) It is better not to use medicine at the time of labour; in former times those medicines in greatest repute were rat's kidneys and hare brain pills. If efforts be not made, and meddling with the hand avoided, and the woman allowed to have the benefit of sleep, she will be readily delivered; why then use medicine? but should there be any thing wrong, then sleep is the best restorative. How can it (medicine) be but injurious? both the mouse and hare pills assail the subtle fluid, and they injure the blood; the life-restoring powder (the medicine in vogue at the present day) impairs the blood, and disperses the subtle fluid; for when the mouse and hare medicines are administered, they must be joined with fragrant drugs; now, at the time of labour the blood-vessels are relaxed, and the subtle fluid deficient and rapid; if then, remedies for dispensing the fluids are given, and the child be born before their influence is dissipated, how can this but be injurious? But can no medicine be used? Yes; a strong decoction of the kung and kivei (two fragrant histus,) with powdered citron peel. If a child is nearly dead when born, it must be instantly wrapped up in warm clothes, and a paper notch, dipped in fragrant oil, being lighted, the cord is to be tied and slowly burned through; the warm spirits enter the abdomen, and by and by the child cries and is restored to life, but if the cord has been previously cut through with scissors, there is no hope. At the time of labour, with the exception of two or three experienced persons, all the female relatives are to be respectfully dismissed with kind words, and not permitted to enter the chamber. During pregnancy it is very beneficial to use a little bodily labour, as the female slaves and the women who labour in the fields seldom miscarry. When a woman knows she is pregnant, a roll of cloth ought to be procured, six or seven inches broad, and passed like a belt round the loins; this is to be worn until she goes to the tub. During her pregnancy, and while sleeping,[1] she ought to be on either side alternately, and not rest always on the same side; thus the fœtus will be able to rest itself conveniently on both sides, and become accustomed to the use of its hands and feet, and at the time of labour it will be exactly in the centre, and be expelled without the slightest difficulty. She must especially avoid the sight of slaughter, and of cruel or wicked deeds; she must not look at the building or repairing of houses, or the digging of foundations; neither must she see tortoises or hares. As soon as the woman is delivered, she is to be put to bed, with a high pillow to lean against, as she must not lie flat down, and a cup of boy's urine, warmed, is to be given her to drink; she must not be asked if she has pain. For three days she must take from three to five cups of an equal quantity of boy's urine and wine, and for seven days a piece of iron, or white pebble, heated to redness, must be dropped into vinegar, and the fumes allowed to enter the mother's nose, in order to prevent or drive away giddiness, and to collect the spirits. The rules most proper for the after treatment are the following, although the author allows that they differ in different parts of the country:—During the time for gruel give gruel, and the same with regard to rice; for the first three days, the patient must only take fowl broth, clear and plain, the oil being carefully skimmed off; she ought not to eat fowl itself; and for ten days she must not eat pork, nor lard for the first month, because it interferes with the course of the blood and spirits; in regard to other things there is no fear. Where the

[1] The fœtus is supposed to fall asleep when the mother does, and to awake at the same moment that she does.

membranes do not come away, take a hempen thread and tie it to the cord, double the latter, so as to make a loop, then tie it again with the thread, and fasten a small weight to it; separate the child by cutting the cord, and in three or five days the whole will shrink, become dry, and pass away.

In this paper a great many subjects have been treated, of which we have said nothing, as, for instance, abortion, death of the fœtus in utero, &c. &c. Besides, a great many prescriptions are given for different complaints, but as the names of most of the articles composing them are unknown to us, we thought it unnecessary to give them. We cannot, however, take leave of the subject without noticing the remedy for prolapsus ani in children, in consequence of dysentery. It is as follows:—Take a little dry feces, *you must not use such as are found in the roads, but they should be from unhealthy persons*, pulverize it carefully, and mix it with rice and water, two doses will effect a perfect cure.—Abridged from *the Dublin Journal* for Jan. 1842.

Account of the Clinique d'Accouchement of Prague for 1840. By Professor Jungmann.

Out of 1466 women who were delivered at the Clinique, 13 had twins, so that 1479 children were born, of whom 793 were boys, and 686 girls; 1351 were born alive; 74 apparently, and 54 really dead. Of these, there were 1423 presentations of the head; 2 of the forehead; 8 of the face; 3 of the shoulders; 4 of the back; 17 of the coccyx; and 12 of the feet. The forceps were applied 52 times when the head presented, and 4 times after the trunk was born: making in all 56, or in the proportion of 3 cases to every 100. The indications requiring the use of the forceps were as follows: they were used 15 times for contraction of the upper outlet of the pelvis; 14 for contraction of the lower outlet; 7 for general narrowness of the cavity of the pelvis; 11 for want of uterine contraction; 3 for rigidity of the soft parts; 1 for oblique position of the head; 1 for falling down of the uterus; 3 for prolapsus of the cord; 1 for convulsions; 1 for the fourth position of the head.

Of these, 7 died that were head presentations; and 2 of those whose body was born before the head.

Turning was had recourse to once for the presentation of the back, and twice for that of the shoulder.

In a rickety woman, 35 years of age, it was ascertained by Baudelocque's pelvimeter, that the antero-posterior diameter of the pelvis was 3½ inches; and in her, artificial premature labour was brought on about the end of the ninth month. The head not being able to be expelled through the passages, and no signs of fœtal pulsation being given by the stethoscope, embryulcia was performed, and afterwards the operation of turning. The mother died an hour after the operation. At the post-mortem examination, it was ascertained that the pelvis was small in all its diameters, the transverse being four, and the antero-posterior not more than three inches in length. An extensive laceration separated almost entirely the uterus from the vagina.

Embryulcia was performed in another case, on account of contraction of the pelvis, and cessation of the fœtal pulsation. Death followed; and, on examination of the body, the antero-posterior diameter was found diminished about a third of an inch.

Premature labour was induced in a case on account of hemorrhage, and presentation of the placenta over the os uteri. The placenta was separated at its edges, and the operation of turning performed. The head, however, had to be removed by the forceps. The child was born dead, but the mother, although much exhausted, made a rapid recovery.

The Cæsarean section was had recourse to, in a woman who died from convulsions. The child was dead. In the post-mortem examination, no cause

for the convulsions was discovered. In another case, this operation was performed on a living woman, in whom the antero-posterior diameter did not measure more than two inches. Both the mother and child died; and, on examination of the mother after death, the pelvis was found contracted in all its diameters; the vagina and os uteri were in a state of gangrene. Of the 23 women who died, 16 had puerperal fever, which was epidemic during the year; 73 in all were affected with it. Twenty-two children had an attack of pneumonia, which proved fatal in 15. Ophthalmia was very prevalent during the whole year.

An operation for harelip with cleft palate was performed in a case three days after birth. The interrupted suture was employed, and the child was enabled to suck immediately after the operation. Soon after the complete cicatrization of the lip, the edges of the palate were brought together.—*Gazette Méd. de Paris*, Oct. 2, 1841.

CASE OF CURE OF RUPTURE OF THE WOMB DURING GESTATION. BY DR RICHTER.

Marianne Zeczek, a peasant of Moravia, 20 years of age, while crossing a bridge in April 1840, when in the ninth month of pregnancy, was suddenly seized with a fainting fit, which lasted a considerable time. Upon recovering from it, she complained of great pain in the lower part of the abdomen, with violent motion of the infant. This latter continued for 24 hours, and the former, with more or less intensity, for four weeks. The fever then subsided, and she was enabled to rise. On the 18th of June, a quantity of very fetid pus escaped from the vagina, the uterus and abdomen seemed to diminish in size, and the motions of the child ceased completely. In the beginning of July, the integuments round the umbilicus became inflamed, and ulceration took place, giving vent to a greenish yellow fluid, similar to that which was passed from the vagina. Some days subsequent to this, the patient felt a hard body in the vagina, which she extracted, and which was found to be a bone, about two inches long, and about the size of a crow quill. On the 15th of July, Dr Richter was consulted. She had then all the symptoms of hectic fever; the abdomen was painful on pressure, and on the left of the umbilicus, which was ulcerated to about a quarter of an inch, was felt a round hard tumour. A bone was discovered firmly wedged in the mouth of the uterus; tepid water injected into the vagina escaped by the opening in the abdomen. Several bones of the extremities of a fœtus were extracted, and frequent injections of warm water were had recourse to. The patient's general health became much improved. Towards the end of August another fistula took place below the umbilicus, into which it soon opened. A slough having separated from this, a hard body was felt, which, upon being removed, was seen to be the scapula. The remains of the fœtus were then taken away by degrees. The intestinal canal had been perforated by the ulcerative process, as fecal matter escaped both from the fistulous opening and from the vagina. On the 13th of October the discharge had ceased. She gained strength rapidly, and was soon able to follow her domestic employments.—Abridged from *Gazette Méd. de Paris*, Oct. 2, 1841.

CURE OF CONGENITAL OCCLUSION OF THE UTERUS. BY PROFESSOR WATTMANN.

A young girl, eighteen years of age, and who had always enjoyed good health till her fifteenth year, began at that period to experience pain, with a sense of fullness in the hypogastric region, uneasiness in the loins, extending down to the knees, burning heat at the genital organs (which were not well developed), with headache, vertigo, and want of sleep. She had never

menstruated. A round and fluctuating tumour, slightly painful on pressure, and which appeared to be the uterus distended by blood, was discovered in the right iliac fossa. The orifice of the urethra was depressed, and at the bottom of the vagina was felt a pouch, which was the inferior segment of the uterus. It was resolved to penetrate it, which was done on the 14th of February 1838, by introducing, at its most dependent part, a trocar and canula. The puncture was afterwards enlarged by a probe-pointed bistoury. A considerable quantity of blood was lost. The wound was prevented from closing by inserting and keeping a canula in it. The operation was successful, as, at the end of December 1840, the patient was quite well, and menstruating regularly.—*Gazette Méd. de Paris*, Oct. 2, 1841.

Cathartics in Retention of the Placenta. By Dr T. H. Todd of Stackville, Miss., U. S.

Dr Todd has reported two cases, in which he resorted with success to the use of purgatives in retention of the placenta, when the administration of ergot, and the introduction of the hand, had proved unsuccessful. In the first case, the bowels had not been moved since the commencement of the labour. A dose of castor oil was given. "With the action of the bowels, the pains returned, and threw the secundines into the vagina, where the mass was readily seized, and removed with the hand, twelve hours after the birth of the child." The second case we give without abridgment. "Prissa, servant of Mr Hines, was delivered of a still-born child, near the sixth or seventh month, in September 1839. On examination twelve hours after delivery, I found that the cord had been broken off in attempts to remove the after-birth. The parts contracted so much that the hand could not be introduced; and the ergot had been given, but produced no effect. As the bowels had not been moved, I advised that a dose of castor oil should be given, and its operation awaited, as there were no unpleasant symptoms in the case. By evening, the oil had operated one or two times, without producing any pain whatever. I now made an examination, but found that the placenta had not advanced any. As the patient was resting well, we resolved to leave the case for the night to nature. At ten o'clock next morning we gave a dose of Cooke's pills, containing equal parts of calomel, rhubarb, and aloes. At six P.M. I was sent for in great haste; the woman was in great pain, and her mistress much alarmed. Soon after my arrival the pills acted upon the bowels, and with the first evacuation, the placenta was expelled, 46 hours after the birth of the child."—*American Journal of the Med. Sciences*, July 1841, p. 248.

Plurality of Children.—Triplets. By Dr A. H. Buchanan of Columbia, Tenn., U. S.

The mother, a delicate woman, aged about 35, and had had four children previously; the father a stout healthy man of middle age. The three children were all well formed, and hearty and living, when the account was written, about six weeks after birth. The child first born was a male, weighing seven pounds; the second, a male weighing four pounds; the third, a female weighing five pounds—making in all sixteen pounds. The placenta was single, and very large, being by actual measurement, twelve inches across in one direction, and fourteen in another, and two inches thick in the centre. It presented three divisions upon its fœtal surface. Each child had distinct membranes and liquor amnii, and there were three distinct cords.—*American Journal of the Med. Sciences*, July 1841, p. 250.

[Davies says, that if the various tables can be relied on, it is certain that

"there are conditions and circumstances which give rise to more double births" in America than in Europe; while Collins remarks—"it is singular that in Ireland the proportional number of women giving birth to twins, is nearly a third greater than in any other country from which I have been able to obtain authentic records." These opinions, as Ramsbotham observes, (p. 622) are attempted to be reconciled "by the explanation, that a large proportion of the first European emigrants to America, were from the Emerald Isle." Be this as it may, there is good ground for entertaining the belief, that both preternatural fecundity, and duplicity in births, are hereditary. For some interesting remarks on plural births, *vide* Ramsbotham, p. 621 (1841.) A case of four children at a birth, is given by M. Bourdois, at page 383 of THE MONTHLY JOURNAL for 1841; and a case of three girls at a birth, (by Dr H. Davies) at page 448 of the same volume.]

ON "GRAVIDINE" IN THE URINE OF PREGNANT WOMEN. BY DR STARK.

After a dissertation on the symptoms of pregnancy during the three first months of gestation, Dr Stark enters into an examination, chemical and microscopical, to determine the nature of the deposit in the urine of pregnant females, to which the attention of the profession has lately been directed, as being one of the earliest and most trustworthy signs of impregnation. The conclusion at which he arrives, is, that "this substance is a matter *sui generis;* a proximate substance or principle forming, in some measure, a connecting link between the albuminous and gelatinous principles." He therefore proposes to call it *gravidine,* both as occurring during the state of pregnancy, and also on account of its falling down to the bottom of the vessel as the fluid containing it cools. Like albumen, fibrin, and caseum, this matter is capable of existing in two states, dissolved or coagulated. If the urine containing the deposit is allowed to stand for from two to six days, a tenacious opalescent pellicle, like congealed fat, rises to the top,—this substance called by Nauche *kiestein,* (on account of the odour exhaled during its fermentation, and from a supposition that it is owing to the presence of milk in the urine,) results from the decomposition of the *gravidine.* During this process of decomposition, the globules of the *gravidine* pass through several changes,—urates and purpurates become developed in the urine, and ultimately the triple phosphate makes its appearance, whence the opalline hue of the *kiestein,* and the crystalline appearance described by Dr Golding Bird as one of its characteristics.—Abridged from *Edin. Med. and Surg. Journal,* Jan. 1842.

[Even admitting the existence of *gravidine* as a peculiar principle in the urine of pregnant women, it is too difficult to demonstrate its presence with certainty and facility, to make it very available in every-day practice for the diagnosis of pregnancy. Dr Stark's discovery, however, if real, is a very interesting one, and, like every one of the same kind, must be either confirmed or disproved by other observers. The researches of Donné regarding the proportion of calcareous salts in the urine of pregnant and non-pregnant women, are of more easy application in practice; and will be found succinctly stated in the abridged article which follows, by M. Lubanski. It is also right to refer our readers to what is said of *kiestein* in THE MONTHLY JOURNAL for December 1841, p. 913.]

ON THE URINE OF PREGNANT WOMEN. BY M. LUBANSKI.

The urine of pregnant women has long attracted the attention of medical observers, from a belief that in it might be found some characteristic signs of pregnancy. A German journal has recently announced the existence of a

new principle in the urine of those who are *enceinte*. After remaining for a period of more or less duration in an uncovered vase, exposed to the atmosphere, their urine, it is said, becomes covered with a greasy pellicle, which, when looked at with the light shining through it, has the appearance of a rainbow-coloured membrane. Some pretend from this single sign to decide on the existence or non-existence of pregnancy. I have made experiments upon a great many specimens, and am convinced that this said pellicle is not constantly present in the urine of all pregnant women; and have found it in women not pregnant, and even in men. It is frequently found upon urine, which has been exposed to the air for two or three days in the open vessel. This character is not constantly observed, and is found in circumstances so different, that it would be difficult to assign any positive cause as an explanation of its presence. The existence of this pellicle has been noticed by all observers. Müller and Berzelius say, that the urine exhales, some days after it has been passed, an ammoniacal odour, and has a similar reaction; it becomes covered with a white mucous pellicle, in which, as likewise upon the internal surface of the vessel, can be distinguished crystals of the ammonia-co-magnesian phosphate. Whatever there may be in these characteristics, the urine of pregnant women unquestionably presents certain peculiarities. It is rarely as acid as that of others; it is sometimes neutral, and sometimes alkaline, on which account it is commonly of a pale colour. But this peculiarity of colour, and of its manner of comportment with reagents would be of small importance, unless coupled with characteristics more constant, and especially with one more significant.

Such a character has been pointed out by M. Donné. His researches are partly theoretical. He supposes that the quantity of calcareous salts, commonly found in the urine, ought to be diminished during gestation, imagining that part of them is required for the formation of the bones of the fœtus. To determine this point, it would be necessary to know the normal quantity of the salts of lime, and then to compare the results with those furnished by the urine of women who are unquestionably gravid. To accomplish this object, pour into a graduated measure 50 parts of urine, and add to it 30 parts of hydrochlorate of lime, when a precipitate is obtained, which in normal urine ought to vary between 40 and 50 parts; so that in the urine of the pregnant woman its quantity will be much less, the greatest amount being 30 parts. Before making this experiment, it must be ascertained whether the urine be acid or alkaline; and if it is not alkaline, it must be made so, by adding some drops of ammonia. The precipitate which one ought to obtain is the phosphate of lime, a salt which is soluble in weak acids. In the same way the urine may be treated by adding a little of the water of barytes, when from normal urine a precipitate of the salts of barytes of from 12 to 15 would be obtained; and from the urine of a pregnant woman of from 5 to 8 parts. It is necessary to remark, that these precipitates are not got till the liquid has been allowed to remain at rest for about twelve hours.

It appears, then, that the difference in the proportion of the precipitates is very considerable, and not the mere result of chance. Donné convinced himself of this by a great number of trials. Thirty-six specimens of urine were brought to him,—of pregnant, as well as non-pregnant females,—and in two instances only did he make a mistake as to the class of patients to which each specimen belonged. It is well to state, that these specimens were from women in the obstetric clinical ward, where patients are only admitted at an advanced period of gestation. I have discovered pregnancy by this test, in three women, in whom neither the *toucher*, nor auscultation, afforded any signs as to their condition, and whom this result proved to be in the family way. In one of these cases (that of a young woman, fifteen days behind her proper monthly period,) I sent a specimen of the urine to Donné, who found in it the peculiarity which we have noticed. This patient, however, had a miscarriage about a month afterwards, when the embryo, from its appearance, seemed to be in the third month. Donné observed a diminution in the

calcareous salts of the urine, in a very remarkable manner, in a woman whose urine he examined for a totally different object. On the first occasion he found the normal quantity of precipitate; a short time afterwards, repeating his experiments upon another specimen, he discovered a notable diminution in the precipitate. From this he suspected pregnancy; and the result justified his suspicions, for she had an abortion three months afterwards.

We leave it to our readers to put what value they please upon this character of the urine of pregnant women; it is for them to repeat the experiments, which, as has been seen, are so easily performed.

Whatever truth there may be in it, we avow, that the theory which has conducted Donné to his researches, is a most attractive one. All authors who have written on embryology, consider ossification as taking place on the fifteenth or thirtieth day after conception. This new formation of osseous parts can only take place at the expense of the mother. It is, therefore, quite logical to endeavour to find out whether the calcareous salts of the urine of the mother are diminished.

Hitherto all the experiments made have been with the urine of pregnant women, as contrasted with those believed not to be so, but marriageable, and who, therefore, might be in that state. We do not know whether the proportions which we have given would remain the same, were we to compare the urine of women pregnant, or supposed to be so, with that of men, children, or women above the age of child-bearing. This is an important point to ascertain; for it may so happen that the quantity of calcareous elements in the urine is not the same in individuals of the same age, of different sexes. Judging from the difference which exists in the form, structure, and composition of the bones in men and women, and in the young and the aged, this seems very probable.—Abridged from the *Annales d' Obstétrique, des Maladies des Femmes, et des Enfans*, No. I., Jan. 1842.

MATERIA MEDICA AND CHEMISTRY.

On the Use of the Ergot of Rye. By George Fife, M.D., Newcastle-upon-Tyne.

Dr Fife states, as the result of his experience, that the ergot of rye is a useful medicine in *polypus uteri*, attended with profuse hemorrhage,—*menorrhagia*, where there is no inordinate action of the heart or arteries, or morbid sensibility of the uterine system,—in *leucorrhœa*, when independent of inflammatory action,—in *chlorosis* with amenorrhœa,—and in *dysmenorrhœa*. The first time Dr Fife saw the ergot exhibited, was by the late Dr Parr of Newcastle-upon-Tyne, in 1828. "It was in a case of *polypus of the uterus*,[1] accompanied with frequent and frightful attacks of hemorrhage. He gave the ergot, after all ordinary means had proved unavailing. The effect produced was not only the moderation of the hemorrhage, but also the expulsion of large and numerous masses of the tumour, in many of which a distinct fibrous structure was perceptible. After its continued employment, the woman, who had arrived at the climacteric period, enjoyed comparative health and comfort, being freed from the repeated and alarming hemorrhages, and experiencing no inconvenience from the small portion of the tumour which, when last examined, still remained. In certain cases of *menorrhagia*, Dr F. has found this medicine of the greatest value. "In this disease," he remarks, "it is necessary to ponder well on the individual circumstances of

[1] *Vide* Monthly Journal, p. 416, 1841, (Mr Moyle's paper,) and p. 570 (Dr Sommerville's paper.)

each case, and to use the utmost caution in ascertaining the cause on which the disease depends; as where such precaution has been neglected, it has been my lot to see both the sufferings and danger aggravated by the ergot. In this respect it does not differ from other active medicines. The slightest reflection will suffice to call to mind the very different states of the system in which this disease occurs. It may, for example, happen in the most phlogistic and plethoric, or it may arise in a person of a diametrically opposite constitution. If given in the first state, it is decidedly prejudicial, unless preceded by such means as are calculated to remove alike the plethora and morbid sensibility; and even when this has been done, its operation requires to be carefully observed. In the last, it acts most beneficially, as it at once raises the nervous energy of the uterus, and, through this medium, probably imparts increased tone to the relaxed and debilitated vessels from which the exhalation takes place." "In several distressing cases of *leucorrhœa*, where the strongest astringent injections had been employed without any effect, except exciting inflammatory action which did not previously exist, I have found the ergot, aided by injections of simple warm water, or the decoction of poppy capsules, perfectly successful." In this disease, it is particularly necessary to attend to the state of the system and the nature of the uterine disorder, before deciding upon exhibiting the ergot. "In *chlorosis* and *amenorrhœa*, I have," says Dr F., "frequently experienced the good effects of the ergot, after aloes, iron, valerian, cantharides, &c., had all been employed without the slightest advantage. In those cases where extreme nervous sensibility exists, it may be most advantageously combined with the valerian, and where the alvine system is torpid, with aloes."[1] In dysmenorrhœa, Dr Fife found it very useful; and in one very severe case, wherein he combined it with valerian, "it appeared almost magical in its operation." The doses recommended are gr. x to ℈i of the powder, and ʒss to ʒi of the concentrated tincture; but how frequently administered is not stated. In one case of menorrhagia, ʒss was ordered to be taken, in ℈i doses, every three or four hours. As to the *modus operandi*, practical men will care little if the facts are found to be as Dr F. and others report them to be. However, it is not difficult to see how "a congested state of the uterine vessels will in one person lead to menorrhagia—the same cause operating on a different constitution will be attended with leucorrhœa." Again, when the nervous system of the uterus is at fault, we in one person have chorea, in another simple hysteria, in others cardiac and pulmonary symptoms.—Abridged from *Med. Gazette*, June 18, 1841.

On Ergot of Rye. By William Catlett, M.D.

Dr Catlett's object is to illustrate certain pathological effects of the drug when administered to the parturient female, which do not appear to have especially attracted the attention of the profession. These are, 1st, The supervention of puerperal convulsions. This complication he holds to be clearly traceable to the ergot in three cases which he reports, and the circumstances of which differed considerably from each other. His experience is decidedly opposed to the practice recommended by Dr Stearns, an American practitioner, of employing ergot in cases where convulsions have occurred, and as a preventative in protracted labours when they appear imminent. 2d, The production of true hour-glass contraction of the uterus. The circumstances under which this effect is likely to follow the use of the ergot, are some such concatenation of circumstances, as the following:—a lymphatic state of the maternal constitution,—a nervous temperament,—lingering labour from defective, natural contractions of the womb, which the administration of ergot has not succeeded in improving,—and this state connected with the

[1] As an emmenagogue, Dr F. prefers the Barbadoes to the Socotrine aloes.

previous death of the child *in utero*. 3d, Its tendency to produce hydrocephalus in the early stage of infantile life. To substantiate this, the author reports five cases where the ergot was administered under various circumstances of labour, and in all of which the child died with symptoms of hydrocephalus at various periods, from the 8th day to the end of the second month after birth. "It will be seen," he observes, "that of these cases, there are none connected with a first delivery, or any in which the child was subjected to very lengthened or forcible impaction. Is there any warrant from this fact, to infer that the ergot had here exerted any specific influence upon the fœtal constitution, as alluded to by Dr F. H. Ramsbotham, independent of the extra-mechanical pressure induced by its action? It becomes, indeed, a very interesting question, if it be admitted that ergot has an agency in the cerebral disturbance thus set up in the infant economy, to determine in what manner it is effected, whether, as above hinted, it be a purely mechanical effect, or occurring through the medium of direct absorption into the fœtal system. The short period which was allowed for its operation in the cases adduced, militates against this conclusion, but by no means renders it impossible. The effects that ergot is admitted to exert on the cerebro-spinal axis, are generally stated to be those constituting the leading symptoms of narcotism, viz. dilatation of pupil, giddiness, delirium, and stupor, and this might, with no great latitude of argument, be insisted upon as probably opening up a sufficiently morbid action to constitute predisposition." Dr Catlett's estimate, in the conclusion of his paper, of the true value of the ergot, as applicable to obstetric practice is, that it is a substance of energetic power, the employment of which in the stages of labour *antecedent to the birth* of the child, is generally *contra-indicated*, and only admissible where there is serious hemorrhage from partial detachment of the placenta, accompanied by deficient uterine tone. But in the *last stage* of parturition, it may be of essential service in checking hemorrhage from whatever cause.—Abridged from *Edin. Med. and Surg. Journal*, Jan. 1842.

On Ergot of Rye. By M. Bonjean.

Ergot of rye, one of the most active substances used in the obstetrical art, has been the object of recent researches on the part of M. Bonjean of Chambéry. He has determined, by numerous experiments—1st, That the ergot, gathered the first day of its formation, has not the poisonous properties which it possesses when taken on the sixth day. 2d, That a heat of 100° C. (212° Fr.) produces the same effect as gathering it too early. 3d, That fermentation also deprives it of its properties. 4th, That old and damaged ergot loses nothing in this respect; which circumstances are important, as they serve to explain the want of success which sometimes attends its administration.

M. Bonjean has discovered two different active principles:

1st, One which acts as a poison, is the oil of ergot, of a uniform consistence, an acrid flavour, a yellowish colour, soluble in cold ether and in boiling alcohol, possesses poisonous properties in a high degree. The author considers that twelve grammes of this oil are equivalent to thirty-two grammes of the ergot of rye; but he has observed, that at a temperature of 80° or 100° (C.) it loses these violent properties, and becomes converted into a resin. It is, therefore, better to prepare it with cold ether.

2d, The aqueous extract is obtained by treating with water the powder, either deprived of its oil or not; it is brown, of a thick consistence and musty smell. It is soluble in water, and can be formed into mixtures, syrups, pills, &c. It is not at all poisonous, but possesses very decided anti-hemorrhagic properties, which induced the author to call it *anti-hemorrhagic extract;* but it appears, that to name a product, which has been but little examined, according to one of its effects, is objectionable. M. Blanc, of Aix-

les-Bains, has obtained excellent effects from the use of this extract; in a case of abundant and obstinate hemorrhage, giving from fifty centigrammes to one gramme in the course of the day. M. Bonjean thinks it applicable to hemorrhages, whether simple or puerperal.

He insists on the real advantage of separating the two active principles, by analysis, the styptic extract and the poisonous oil.—*Journal de Chimie Médicale*, and *Pharmaceutical Journal*, Jan. 1842.

On the Use and Abuse of Brown Bread. By W. P. Brodribb, Esq.

Brown bread differs only from white in containing a portion of the cuticle of the wheat, or bran, as it is called. Brown bread with many acts as an aperient; not, however, from any peculiar property of the bran, but simply from the mechanical irritation it produces upon the intestinal canal. When this effect is not produced, the use of brown bread should not be persevered in; for the insoluble substance not passing away, may give rise to intestinal concretions.—*Med. Gazette*, 25th June 1841.

[Oat-meal porridge is an article of diet as well adapted for ensuring a daily satisfactory stool as brown bread, and in Scotland is often recommended for this purpose. It is liable to the same objection as the brown bread, the husks of the oat forming generally the nucleus of intestinal concretions found in the human subject.]

FORENSIC MEDICINE.

TRIAL FOR CULPABLE HOMICIDE.

(REPORTED FOR THE MONTHLY JOURNAL OF MEDICAL SCIENCE.)

High Court of Justiciary, Edinburgh, November 9, 1841.

Robert Porteous, blacksmith, was placed at the bar, charged with the murder of William Harper, a private in the 17th Lancers, on Sunday, 8th August last. Previous to the trial, the Lord Advocate intimated, that he departed from the charge of murder, limiting it to the crime of culpable homicide.

From the evidence, it appeared, that Porteous and some others had been at a marriage party, where they had drunk pretty freely, and that, on the Sunday evening in question, they were accompanying some friends from Musselburgh to Edinburgh. At Piershill, they came up to two soldiers, whom they accosted; some conversation ensued, during which Porteous stepped forward, struck Harper, and knocked him down, in consequence of which his death took place within twenty-four hours.

One witness, James Johnston, described the injury to have been received, as follows :—" Porteous struck Harper, who was by witness's side, and he fell at his feet. Witness lifted Harper, and he was in the attitude of putting on his bonnet, when Hugh Alexander came up and gave Harper a blow, upon which he staggered. Witness had his left hand around Harper's back supporting him, when Porteous came round and gave Harper a blow, *who fell back with his arms extended, like a log of wood.*"

Harper, who was a slender lad, of twenty years of age, was carried immediately to the regimental hospital in a state of complete insensibility. On examination, it was found that he had received a severe blow immediately behind and below the right ear, attended with swelling and ecchymosis of the part. The back of the head was also swollen, and bore marks of injury, but no fracture or depression could be detected. He continued in the same

state most of the night; but towards morning became somewhat coherent, so much so, as to be able to answer questions, though with reluctance, and to recognise those who spoke to him. He complained much of the pain in his head. He continued without much change till evening, when he became worse, and suddenly expired.

As it is only the medical evidence that can be interesting to our readers, we shall confine ourselves to it.

The first witness called, was Dr Marr, Dundas Street, who stated, that, at the request of Dr Dempster, surgeon of the regiment, he visited Harper on the Monday evening, a short time before his death. He also assisted at the post-mortem examination, of which he read the following report:—

"At the lower angle of the inferior jaw on the right side, there was tumefaction and lividity, with a considerable effusion of blood into the cellular tissue around the parotid gland. The posterior part of the head *externally* presented a slight swelling, with ecchymosis over the left of the occipital protuberance, extending to the left ear. On removing the calvarium, there appeared some effusion of fluid blood extending over the greater part of the right hemisphere of the brain; there was also effusion of the coagulated blood under the anterior lobes of the cerebrum, and at the base of the skull under the left lobe of the cerebellum. On examining the brain itself, both anterior lobes were found considerably lacerated, as also a small portion of the left lobe of the cerebellum. The lacerated portions were mixed with small clots of blood, besides some infiltration of blood into the surrounding parts of the brain. The rest of the brain was healthy. On the left side of the skull, a fracture, without depression, was discovered, extending from the upper third of the lambdoidal suture through the occipital bone, terminating in the base of the skull at the foramen lacerum posterius.

"It is worthy of notice, that the skull was of a thinner structure than usual.

"The viscera of the thorax and abdomen appeared quite healthy.

Remarks.—It is probable that the injury on the right side of the lower jaw was inflicted by a severe blow, which knocked down the deceased at once, and, in the fall, the posterior part of the head came violently in contact with a stone, or some hard body, which caused the fracture of the skull, extravasation within the head, laceration of the brain, and consequent death.

Again, it is not probable that the injury on the posterior part of the head was caused by any blow from a fist or instrument, because, in that case, the deceased would have fallen forward, and most likely there would have been some marks on the face or forehead.

J. DEMPSTER.
J. MARR."

Cross-examined.—It would be extremely difficult to say whether the blow on the jaw *could* have caused death. The witness was then asked if Harper had received the blow and not fallen, what would have been the consequences? Answered, that it must have been a less severe blow, because any blow given with the force that the one in question had been given, in such a situation, must necessarily have occasioned a fall. The injury on the back of the head could not have been occasioned by a blow, except by a person of extraordinary strength. The blow was immediately over the jugular vein, and the large vessels going and coming from the brain, which renders blows received in that region more dangerous than elsewhere.

By the Court.—Attributes death to the blow on the jaw and the fall. The immediate cause of death was the fall.

Sir George Ballingall deponed, that he concurred in the report read by the previous witness. Considered the injuries as the cause of deceased's death.

Cross-examined.—The blow on the jaw was not necessarily fatal. Has seen such severe blows without producing fatal results. Found no other

mark of a blow on the deceased, except the one on the jaw, and the contusion caused by the fall.

By the Court.—The blow that produced such a fracture would necessarily knock a man down? Thinks the deceased could not have risen up and attempted to strike, if the injury on the back of the head was occasioned by the first fall. He might have been in the situation described by Johnston, and attempted to put on his cap.

Dr Moir, Musselburgh, was examined in exculpation. He attended the post-mortem examination. Supposing the blow on the jaw had stood by itself, it might have occasioned temporary inconvenience, but not been attended with serious consequences. Conceives the fracture of the skull was not directly connected with the blow on the jaw. If the result had been, that the man fell from the blow, the fracture would have been on the opposite temple. Attributes death to deceased having fallen on some very hard substance.

By the Court.—Suppose the man had received a blow directly in front, he would have fallen back? The blow on the jaw must have been given from the side. Thinks it not possible that the blow had been given in the position of two persons squaring at each other. The blow might have been given in the position which Johnston described he had seen the deceased. Thinks the fracture on the back of the skull might have been produced by an accidental fall. He might have been stupified by the blow, and, in consequence, fallen more easily than he would otherwise have done.

The prisoner was found guilty, but was only sentenced to two months' imprisonment, in consideration of his having been in jail for three months previous to the trial.

[The foregoing case is interesting to the practitioner, on account of the great lesion of the brain which existed, and the comparative entireness of the functions of the organ, up even to within half an hour of his death; but it is only in a medico-legal point of view that we bring it forward. To us the evidence of Dr Marr and Sir George Ballingall is clear and decisive, both as to the effect of the blow and the relation which it had in inducing the death of the unfortunate young Lancer. But there is one question which was not put, whether a blow from the herculean arm of a blacksmith, in such a situation, could not produce concussion of the brain. For our own part, we think it perfectly possible that it *could*.

With regard to the exculpatory evidence, we respectfully take the liberty of differing from Dr Moir. He believes that the fracture was accidental and not directly connected with the blow; because, says he, if the man had fallen from the effect of the blow, the fracture would have been on the opposite temple. This we do not admit; the effect of striking behind the ear is well known to pugilists, and on consulting any of the accounts of the brutal exhibitions of the ring, it will be seen that a man, when struck behind the ear with such force as to knock him down, falls directly backwards. It is well known to pugilists that such a blow behind the ear, is more likely to disable an opponent than any other.]

On the Static Lung Tests. By W. A. Guy, M.B. Cantab., Professor of Forensic Medicine, King's College, London.

In this paper the author endeavours to strengthen the conclusions as to the insufficiency of these tests arrived at in a former paper, by contrasting with one another the statements of weights given by the various authors to whom he then had occasion to refer. He first presents in a tabular form the statements of the *absolute weight* of the lungs of mature still-born children, and of children who survived their birth one month or less, given by various authors as the result of their experience. From this we find, that there not

only exists a discrepancy of the most serious nature in their statements, the *maximum* number in the same column being about three times as great as the *minimum*; but that the *maxima* in the still-born, in more than one instance, fall but little short of the *maxima* in children who had lived one month or less, whilst, in one case, the highest number in the still-born greatly exceeds the highest number in those born alive; and the same general results are found also on the *minima*. These differences (entirely due, as he conceives, to the small number of facts collected by the several authors, and not to any error of calculation,) show the total insufficiency, in a medico-legal point of view, of evidence as to the value of this sign of a live or still birth, founded on personal observation; and lead to the conclusion, that if there be any truth in the general statement, that the weight of the lungs is materially increased by respiration, it is at least inapplicable to individual cases, and for medico-legal purposes. He next applies the same mode of examination to *Ploucquet's test*, or the weight of the lungs, as compared with that of the body. Here also the several values differ widely from one another; some giving nearly the same proportion before and after respiration, and others presenting a difference nearly as great as that laid down by Ploucquet. This test, therefore, is also useless, though it possesses some advantages over the former one; and by taking into account the fact of the greater weight of the body of the still-born infant over that of one which has breathed, might possibly, if based on a sufficient number of observations, furnish a more unexceptionable and accurate standard of comparison. The author proceeds to state and comment upon seven cases which had fallen under his observation, in regard to which the static lung tests would have given correct indications in two, would have left two others doubtful, and would have led to erroneous conclusions in the other three; and this only if the *average* weight and proportion to the weight of the body had been employed as standards of comparison, whereas the taking the *highest* and *lowest* weights and proportions as the standard, would have left the question of the child's breathing wholly unanswered. The conclusion to which he comes is, that the static lung tests are wholly useless for all practical purposes, and ought not to be relied on in medico-legal inquiries. Whether employed to distinguish respiration from non-respiration, or respiration from inflation, they are alike insufficient, except in rare instances, where the extreme values can be employed; and where the question of inflation has no place, they are as unnecessary as they are useless.—Abridged from *Edin. Med. and Surg. Journal*, Jan. 1842.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

Tuesday, November 9, 1841.

1. *Case of Cyanosis depending upon Transposition of the Aorta and Pulmonary Artery, By Dr Walshe, Professor of Pathological Anatomy in University College.*—This was a case in which the origins of the aorta and pulmonary artery were transposed; the former arising from the right ventricle, the latter from the left; while the connections of the venous trunks, pulmonary and cavæ, were natural. The coronary arteries were given off in the usual manner immediately above the sigmoid valves of the aorta; the ductus arteriosus pervious, and wide enough to admit a good-sized probe, communicated in the ordinary way with the aorta and pulmonary artery; the foramen ovale was open; the ventricular septum not perforated; the walls of the right ventricle were from two to four times as thick as those of the left; the aorta and its branches constantly circulated black blood, with the exception of the extremely small quantity of red fluid carried from the pulmonary artery by the ductus arteriosus; the pulmonary artery and its ramifications constantly circulated florid blood, with the exception of the small quantity of black, which may have found its way through the foramen ovale from the right into the left auricle; the viscera were rather larger than in naturally-conformed individuals of the same age; the heart was even hypertrophous; yet the latter viscus was nourished by venous blood only—the former by blood very slightly oxygenised.

The subject of this malformation lived to the age of ten months, a much longer period than any of the subjects of the few similar cases on record.

2. *On the Operation for the Cure of Hydrocele by a retained Injection of Diluted Tincture of Iodine. By J. R. Martin, Esq., formerly Surgeon of the Native Hospital, Calcutta.*—In consequence of an accident of a serious nature, which occurred several years ago, to a native in the Calcutta Hospital, after the usual mode of treating hydrocele was adopted, namely, that by port-wine injection, the author, in the next case, substituted tincture of iodine for the wine. Two common urethra-syringefuls were injected, of a mixture made in the proportion of one drachm of the tincture to three drachms of water. Acute pain and faintness followed, which were relieved by the recumbent position, and the injection was retained, the scrotum being moved about so as to bring the fluid into free contact with the vaginal cavity. In five days the patient was discharged cured, scarcely any other treatment having been necessary.

From the time of the occurrence of this case, in March, 1832, to the end of 1839, 2393 cases were operated upon in the Native Hospital under the orders of the author in the manner above described; some cases only, in which the tumour was of very great size, having required two syringefuls of the injection.

The author, after entering into the details of many of the cases in which he employed the above treatment, sums up its advantages as follows:

1*st*. That it is far more simple and easy of performance, than any operation before employed.

2*d*. That no serum has in any case been reproduced requiring a second tapping.

3*d*. That little care is required in the after-treatment.

4. That the failures are under one per cent.; and, lastly, that the operation is free from all danger of infiltration of the scrotum, from the quantity of injection being so small, and from its being retained within the tunica vaginalis.

Mr Macilwain thought that there were many parts of surgery requiring improvement, but he did not include the operation for hydrocele among the number. He had no doubt of the efficacy of the iodine as used in Mr Martin's cases, but to found the practice in question upon the failure of the old mode was but very poor reasoning. Infiltration of the scrotum in the cases which he had seen, had not depended on the kind of liquid used, but was attributable, in all the cases, either to the incontrollability of the patient, or a want of caution on the part of the surgeon. In two cases of infiltration which he had seen in Bartholomew's Hospital, the accident depended on the latter cause. He had been called to three cases, also, in his private practice, in which this mishap had occurred. In these three cases the causes were as he had stated. In one of these cases the injection was let out from the cellular tissue by three or four free incisions into the scrotum, which step prevented sloughing.

Mr Stanley believed that the question raised by Mr Martin's paper referred to the preference to be given to the employment of one or other liquid in this operation. Now, we know that the operation as practised in the old way with the port-wine injection would occasionally fail; if, therefore, the iodine was, as Mr Martin stated, so generally successful—if, moreover, it produced inflammation more rapidly, and this inflammation subsided quicker, it certainly had these advantages in its favour.

Mr Acton had had many opportunities of seeing the iodine injection employed both by Ricord and Velpeau. In their hands the practice had been most generally successful. In none of these cases had any ill consequences ensued, nor had he noticed the excessive pain to which Mr Hawkins had alluded. He had once seen the cellular tissue of the scrotum injected by Velpeau, but no evil consequences followed. In Paris the port-wine, before use, was heated by a charcoal furnace, and it was in that city not a successful application in these cases. The iodine was used in the proportion of one part of the tincture to two or three of water. He was glad to have the present opportunity of contradicting a report which had been spread abroad, and was mentioned in Mr Martin's paper, to the effect that Ricord had once transfixed the testicle with a trocar. This was not the fact;—such an accident had never occurred to this able surgeon. He was, however, in the habit of stating in his lectures, that such a misfortune once befel a French surgeon in attempting to cure hydrocele. This surgeon he (Mr Acton) believed, was no less an individual than Dupuytren himself.

November 23, 1841.

1. *A Case of Aneurism of the ascending Aorta bursting into the Right Ventricle. By Thos. J. Beck, Esq., Lecturer on Surgery at Sydenham College. Communicated by Dr Robert Lee.*—On examination of this after death, a communication was found to exist between the ventricles. The aneurismal sac, which resembled the finger of a glove, three-fourths of an inch in length, had burst at its extremity into the right ventricle. The author observes upon it as follows:—"It has been questioned whether the opening between the aorta and right ventricle was an original malformation, having the same probable origin as the opening between the ventricles, or whether this is the remains of an aneurismal sac; but from the history of the case, the situations of the openings, the extent and nature of the disease found around it, being the same as is found around other aneurismal sacs, the latter appears the most probable conclusion, which is considerably strengthened by a reference to the cases detailed by Mr Thurnam, in the twenty-third volume of the "Transactions" of the Society, and from an examination of the preparation."

Dr Addison had seen the cause of aneurism detailed by Mr Thurnam, in the Society's "Transactions," and mentioned in the paper just read. In Mr Thurnam's case the physical signs were much the same as were observed in the present instance; their locality and the unpleasant *bruit* of the heart were identical, but the time at which the sawing sound of the heart was heard was different, as it was audible on the systole of the organ, and most so at the upper part of the heart, and over the chest as high as the clavicle. Many practitioners saw this case, and were puzzled to diagnosticate it. He considered it to be disease of the aorta, with some un-

natural connection with the ventricle; the peculiar thrilling and sawing sound was found after death, which occurred from dropsy, to have been produced by the passage of the blood from an aneurism of the aorta into the right ventricle.

Dr C. J. B. Williams had seen the case mentioned by Mr Thurnam. Mr Thurnam had thought the prolonged murmur was owing to regurgitation through the mitral valve, owing to disease in that structure. The sound, however, was prolonged beyond the period of the second sound; he (Dr Williams) thought the sound had been produced by a rush of blood from one artery to another; he did not come to any decided conclusion as to its direct cause, but conjectured that it was dependent on an aneurism of the aorta, having an unnatural communication with some other vessel. The prolonged murmur alluded to had existed in Mr Beck's case also, and might, perhaps, if it had been observed in other cases, be taken as a diagnostic mark of the disease. The extensive dullness observed on percussion in these cases was not to be accounted for by the size of the aneurism. This symptom was supposed in Mr Thurnam's case to be dependent on effusion into the pericardium, but it did not arise from this cause, when he (Dr Williams) saw him, for there was then an extended pulsation, and it must, therefore, have originated in the aneurism of the aorta. This extensive dullness on percussion was also observed in other aneurisms, and seemed to show that they were larger during life than after death, if there was not a large deposit of fibrine. The force of the circulation would account for this difference in size.

Dr Addison considered the dullness on percussion to be a symptom not at all to be relied on. He had seen a case of a considerable-sized aneurism in which there was no dullness on percussion.

Dr Williams would not consider the dullness on percussion taken by itself as of great value, as a symptom diagnosticating the presence of aneurism. He had, however, never met with a case of aneurism of the arch of the aorta, or of the innominata to any extent, which was not accompanied by dullness on percussion; this was, therefore, an auxiliary in our means of diagnosis, but, of course, other symptoms of the presence of a tumour would be looked for.

2. *On the Structure of the Human Placenta. By John Dalrymple, Esq., Assistant-Surgeon to the London Ophthalmic Infirmary.*—In the early part of the present year the author, having pursued some anatomical investigations into the structure of the human placenta at term, and having made several drawings of the injected capillaries of the tufts, afterwards had an opportunity of seeing the copies of Weber's drawings, given in the "Icones Physiologicæ" of Wagner, and transferred to the pages of Dr Willis's translation of the latter author's *Physiology*. The resemblance of the present drawings to those given by Dr Willis were so striking, as to go far of itself to prove the correctness of both draughtsmen, and to corroborate the views entertained by Weber of the anatomical conditions of the organ. They differed also from the engravings of Dr Reid, (given in the January number of the *Edinburgh Medical and Surgical Journal* for 1841), inasmuch as nowhere could be seen an artery and vein running side by side, forming an apparently single vessel, though with a double tube, and terminating abruptly in blunted extremities, where the anastomosis took place between them.

1. It appeared from Mr D.'s observations, that the placenta was made up of the innumerable subdivisions of the umbilical vessels terminating in beautifully coiled and convoluted capillaries, which formed tufts or bouquets of vessels clothed by a prolongation of the endochorion, derived from the fœtal surface of the organ.

2. That nowhere did a division of an umbilical artery terminate otherwise than in a branch of the umbilical vein; and each branch as well as tuft of vessels was covered by a prolongation of the before-named membrane.

3. That each tuft was, in fact, a real villus, the endochorion being covered externally with an epithelium-like tissue, having nucleated cells and corpuscles.

4. The uterine surface of the placenta is covered by the decidua, which does not appear to enter farther into the structure of the organ than between the lobules, and the depth to which it thus penetrates varies with the depth of the fissures.

5. That fibrous bands stretch from the fœtal to the placental surface of the organ, giving firmness and support to the vessels.

6. That there are no defined cells in the placenta, but that the nutrient fluids of the

mother are poured into the interstices of the tufts, which are not bound or connected together by a common cellular tissue.

7. That on the decidual surface of the placenta are thinly scattered here and there blunt conical papillæ, about a line and a half in length, made up of innumerable coiled and contorted capillaries. Query? Are these the analogues of the fœtal cotyledons of the ruminants?

From these observations, which were given in minute detail, the author has attempted to simplify the functions of the human placenta. He observes, that in the incubated egg, in consequence of the non-connexion between the embryo and parent, a nutrient or respiratory organ is indispensable, and hence the more complicated system of vessels. That in the oviparous vertebrata, the vitellary sac, and the omphalo-mesenteric vessels, represent the placenta of the mammalia, which is the absorbent organ of the fœtus; but while, in the one case, the nutrient materials of the mother, already aërated by her lungs, are conveyed by the uterine arteries for absorption and nutrition of the embryo; in the other, the materials of the blood are absorbed by the folds of the vitelline sac, and conveyed through the circulation of the young bird, requiring however, contact with oxygen for a second circulation. Hence a new membrane, or one that is persistent up to the time of independent respiration, namely, the allantois; and hence, also, the more complicated system of its vessels. The allantois, as a respiratory membrane, exists only as a rudimentary organ in mammalia; and the function of the placenta being solely that of nutrition by already oxygenised materials, the cord contains only a simple system of incurrent and excurrent vessels.

Dr Robert Lee, in the course of last summer, had examined several very minutely-injected placentæ, and had no doubt, from what he had then observed, and from what he had seen in the placental tufts of the sheep, that the account now given by Mr Dalrymple, of the manner in which the fœtal arteries of the human placenta terminated in the veins, was correct. When the blood-vessels of the human umbilical cord reached the placenta, they all carried before them a layer of the chorion, or became invested with a sheath of the endochorion, as it had been termed. It was easy to demonstrate that any fœtal vessel of the human placenta had two coats; the inner being a continuation of the blood-vessels of the cord, the other the sheath of endochorion. Between these vessels, on the fœtal side of the placenta more particularly, there were large irregular interstices, or spaces, which freely communicated together, and were called by Dr William Hunter "the cells of the placenta." Into these, the existence of which he (Dr Lee) had formerly doubted, the maternal blood flowed by the small curling arteries in the placental decidua, which were continuous with the arteries, or anastomosed with them. Dr Reid had stated that the veins of the uterus were continued into the placenta, and formed the interstices, or cells, in the organ into which the maternal blood flowed; but he (Dr Lee) was satisfied that this opinion was incorrect. The veins of the uterus always terminated in smooth, oblique openings in the lining membrane, which were not continued into the placenta. There were oblique openings in the placental decidua, it was true, which corresponded with these smooth, oblique openings in the lining membrane of the uterus, and by means of which a communication existed between the interstices of the placenta, and the venous system of the uterus. These structures, however, were entirely different from one another; and when the placenta was separated in the labour, the arteries and veins of the uterus were opened, but not lacerated.

In answer to a question from Mr Oldham,

Mr Dalrymple observed, that the object of his paper had no reference to the communication between the embryo and the mother, but was confined to the special anatomy of the placenta itself. He had never had the good fortune to obtain a gravid uterus, and could not, therefore, speak from actual observation of the mode of vascular connection which existed between the fœtus and the mother. He had not observed bodies resembling those seen on the fœtal membranes of the pachyderms, but thought that the blunt papillæ, mentioned in the paper, were rudiments, or analogues, of the fœtal cotyledons of the ruminantia. Mr D. expressed a hope that those gentlemen who possessed frequent opportunities of inspecting recent placentæ, would direct their attention to the question, whether the vibratile cilia existed on the covering of the endochorion forming papillæ or placental tufts, which the epithelium-like scales and corpuscles rendered not improbable. The highest powers of the

microscope only would be available for such a purpose, and the placenta should be examined with the least possible delay, as much variation as to the time the vibratile action remained existed with regard to these objects, after separation from the living organism.

Tuesday, December 14, 1841.

1. *On the Relation between the Symmetry and the Diseases of the Body. By James Paget, Esq., Demonstrator of Morbid Anatomy in St Bartholomew's Hospital.*—The author relates several cases in which morbid changes exactly similar in nature and extent were found on corresponding spots on the opposite sides of the body; and argues from these, and from the more numerous instances in which there exists a general similarity in the signs and results of disease on the two sides of the body, or on corresponding spots in each, that the law of constitutional diseases is to affect both sides of the body equally and simultaneously. He urges, that although the exceptions to this law are more numerous than the observances of it, yet since each of the latter involves a coincidence of two very delicate processes, such as could not often happen by chance, a few facts affirmative of the law should have more force than a great number which seem to negative it.

In explanation of symmetrical diseases, he supposes that some depend on a disorder of the blood or nervous system affecting the nutrition of every part of the body; others, on such a disorder of one or the other, as affects their relation to the nutrition of only one tissue or pair of organs, or of only symmetrical spots previously altered in a tissue; and that others, which are connected with metastasis, depend on a reflection of anormal nervous excitement at the nervous centres, from one set of nerves to those of the corresponding part on the other side of the body.

2. *On Diseases which affect Corresponding Parts of the Body in a Symmetrical Manner. By William Budd, M.D., Bristol. Communicated by Dr Budd.*—The writer begins by stating that his attention was first called to this subject by several cases of rheumatic fever, in which, as the disease passed into a chronic state, corresponding parts of the limbs became affected *in pairs*, in such manner that the affection of the limbs of one side repeated itself in those of the other, not merely with a general correspondence of situation, but joint for joint, bursa for bursa, sheath for sheath.

These facts occurred to the writer in 1836 at the Middlesex Hospital. Soon after this, having seen in Bizot's announcement, that the atheromatous deposits of arteries are likewise distributed in corresponding arteries in a perfectly symmetrical manner, Dr Budd began to look out for instances of the same fact in other diseases. These soon came before him in great number and variety; and in the course of a short time he was enabled to ascertain that in most diseases of the skin, many diseases of the joints, in the disease of the arteries just alluded to, in diseases of the eyes, ears, and many other structures,—in fact, that in a great number and variety of diseases of constitutional origin, the lesions peculiar to each affect corresponding parts of the body with alterations, whose likeness in form and situation is often of the most singular exactness. Particular examples of this, taken from a considerable variety of diseases, were exhibited in a series of casts and drawings laid before the Society, in illustration of this paper. As this fact repeats itself in diseases differing so widely in many other important respects, and especially in the aspect of their lesions, and the nature of the textures involved, the writer infers that it is a fact of high order, and one which is justly entitled to the rank of a *law*.

In order to arrive at the true interpretation of this law, he proceeds to inquire at great length into the nature of the diseases in which it occurs.

The result of this inquiry leads him to divide all diseases of this kind into two principal groups:—

First, Diseases in which the morbid changes depend on fault originating in the solids affected. And,

Second, Those in which the lesions originate in morbid states of the blood.

As an extreme case, and a fit type of changes originating in the former way, Dr Budd refers to instances of monstrosity affecting corresponding parts of the body with exactly similar deformities; and many other examples of the same fact in other forms are also adduced.

The second group is again divided into two others.

The first of these includes diseases in which the morbid state of the blood probably consists in deficiency of natural ingredients; the second, those in which it depends on the presence of morbid matters of special kind in that fluid.

As a distinct example of the former, Dr Budd cites those cases in which ulceration of the cornea comes on in man and animals, fed on substances deficient in nitrogen; ulceration which almost always affects both eyes in an exactly similar manner. The disease named rickets, is also mentioned as being probably another case in point.

The second group, that in which the morbid state of the blood depends on the presence of foreign matters of *special* kind in that fluid, includes a much larger number of diseases than either of the others. It is this group which has more especially engaged the writer's attention, and it is made the special subject of the subsequent remarks.

Having entered into a great variety of considerations, in order to prove that all the forms of disease of which examples are laid before the Society fall under this description, namely, that all these are diseases which depend on the presence of foreign matters of special kind in the blood, he then proceeds one step farther, and endeavours to show, by facts and inferences of various kinds, that in each case the morbid matter peculiar to the disease which may be the object of regard is detained in the seat of each individual lesion, and is there held in affinity with the part affected; that being, in fact, the essential condition of the origin of such lesion.

A case of eruption caused by the internal use of the iodide of potassium, and distributed over corresponding parts of the body in patches of exactly similar pattern—the palsy of the wrists affecting the same group of muscles in each forearm, which is caused by the presence and local action of lead absorbed into the system—the detention of madder in the bones tinging corresponding bones with the same shade and arrangement of colour, while all other textures are entirely free from it, are cases cited as types of the group, and as offering distinct illustrations of both points of the theory maintained by the writer.

In relation to this group, therefore, the law now takes a more specific form, and requires a distinct interpretation: for, according to these views, it is clear that the agency which here determines the lesions to assume a symmetrical arrangement, is, in fact, *that* which determines a given morbid matter in the blood to fix on one particular part, in preference to any other of the same structure; so that a given part once affected, the morbid matter not yet locally engaged is not free to fix on this or that part, however like to the first in outward appearance, but is drawn to that very part on the opposite side of the body, which is symmetrical with, or analogous to the first. And this agency the writer conceives to be the same, in virtue of which, in the ordinary exercise of assimilation, corresponding parts of the body separate from the blood, and appropriate *matters of identical composition and in equal measure*, thus maintaining through life their original likeness in form, composition, and structure. The writer then remarks, that, under this view, the morbid matters of these diseases may be regarded as tests or measures of structural likeness, and calls the attention of the Society to many cases exhibited in the casts and drawings on the table, in which lesions, exactly alike in form and nature, repeated themselves, not only in the same situations in the limbs of the two sides, but *also in corresponding parts of the upper and lower extremities;* thus giving, in deviations from the normal state, much curious and novel illustration of those laws of symmetry and organic analogy, governing the evolution of opposite regions of the frame, which anatomists have already established on other grounds. Having fully proved the very general prevalence of a law of symmetry in disease, the writer next considers the causes which may interfere with its manifestation. Three very influential causes of this kind are recognised: These are, febrile movement, local injury, or any other cause materially affecting the organic state of a single part, and thereby determining morbid matters in the blood to that part in preference to others; and, lastly, circumstances having presumed relation to the *amount* of any given morbid matter present in the system.

The disturbing influence of these several conditions is illustrated by numerous examples; and it is then remarked, that in effect of these causes of interference, which are so frequently in action, and perhaps of many others less distinct to apprehension, numerous exceptions of the law of symmetry *necessarily* occur, even in those diseases the most remarkable, in general, for the constancy and perfectness of its manifestation.

In consideration of the powerful disturbing influence of the condition first mentioned, and by observation of particular cases, the writer has been led to adopt the following proposition :—

That in diseases whose lesions have a tendency to symmetrical arrangement, the symmetry will be more perfect as the disease is more chronic in its progress, more free from febrile movement and local vascular excitement, *and in its course and character more nearly resembles the ordinary processes of assimilation;* and in this the writer finds a very remarkable confirmation of the particular view he has taken of the nature of the agencies concerned, in determining the symmetrical arrangements of the lesion in these cases.

The source, chemical character, and specific nature of the morbid matter of the diseases treated of, are the next subjects considered. But on these abstruse and difficult topics the writer's speculations become more vague, and are advanced with much less confidence; for these reasons, it is impossible to give a correct view of them in an abstract.

After entering at considerable length into this part of the subject, the writer concludes by relating a series of cases illustrating the views developed in the former part of the paper.

Dr Copland said, that this "symmetry of diseased action" was only a new name for a principle that had been always acknowledged in medicine, viz., that if a depression of the vital powers, a cachectic state of the system, or any other cause which affected the constitution generally, produced disease in any organ which was double, the disease would be double likewise. He said that fever, which Dr Budd had spoken of as one of the disturbing causes of this law of symmetry, was itself, in fact, an instance of this very harmony, for we knew, that if inflamed kidney, bronchitis, or pneumonia, occurred in the course of fever, both kidneys or both lungs would be affected.

Dr Gregory remarked, that so many diseases appeared symmetrical, that he had been most struck during the reading of the papers with the diseases which were not so. The ophthalmia which followed small-pox scarcely ever affected more than one eye. He thought that nature probably made an exception to the law of symmetrical diseases in this case, because the eye was such a very important organ. Gonorrhœal ophthalmia was always confined to one eye. He thought that this was generally the case with gonorrhœal inflammation of the testicle.

Mr Lloyd had had three cases in St Bartholomew's Hospital lately, in which both testicles were affected.

Dr Bartlett had had great experience in gonorrhœal testitis, and believed that the inflammation always attacked one testicle and then spread to the other.

Dr Budd called attention to a drawing of symmetrically-dropped hands from lead, and said that lead was detected in the muscles of the fore-arm of this patient.

Mr Cæsar Hawkins inquired whether lead had been searched for in the other muscles of the body; and observed, that malignant diseases were an exception to this general symmetry of diseased action.

Dr Budd answered that the lead had not been sought for anywhere else than in the forearm. Malignant diseases did not depend upon a chemical cause as did all those to which he had alluded, and that therefore they were not symmetrical.

Mr Paget had recently met with some cases of cancer and other malignant diseases in which the two sides of the body were equally affected in exactly corresponding parts, and he considered that these diseases followed the law of symmetry when there was no disturbing cause. He was glad to find that Dr Budd's paper confirmed his own in so many points.

MEDICAL SOCIETY OF LONDON.

Monday, Jan. 17, 1842.

The subject of *excito-motory action*, which has occupied the attention of the Society for several nights, was again resumed.

Mr Pilcher entered into an exposition of the doctrine of excito-motory action, and of his views upon the subject. Excito-motory actions were those movements which took place, independently of the brain and of the mind, and which were dependent on the medulla spinalis, and, perhaps, the ganglia. The impressions which led to excito-motory movements were not sensations, with which they had long been confounded

by physiologists. There were four sets of nerves; one set conveyed impressions to the brain, and produced sensations; another set proceeded from the brain, and was distributed to muscles of voluntary motion, being under the control of the will; a third set conveyed impressions from the various parts of the body, to the medulla spinalis; and a fourth set proceeded from the medulla spinalis to the various muscular organs of the body, conveying a power which produced the excito-motory actions, which were altogether independent of the will. Grey nervous matter, wherever found, elaborated nervous influence. All movements not strictly voluntary, were excito-motory, from the most minute actions in the lowest moss, up to the most important in man himself. The movements of the stomach depended in part upon the presence of food in that organ, which acted as a stimulus, and the salivary glands were likewise stimulated by the presence of food in the mouth, in the same manner. Even voluntary muscles were acted upon by the spinal marrow, when the brain was inactive, or the mind was absent. The ganglia of the great sympathetic were analogous to the medulla spinalis; the former were chiefly subservient to nutrition, while the latter nervous centre was principally concerned in the involuntary animal functions.

Mr Dendy thought that the medulla spinalis possessed nervous power, but that this force was derived from the brain, which he regarded as the fountain of all nervous influence. When the brain was removed, all action ceased sooner or latter.

Mr Pilcher said, that Mr Granger had made repeated dissections of the medulla spinalis in sheep, a short time after their death, and that he had traced the excito-motory nerves to the grey matter of this part of the nervous centres. These nerves were not lost or mixed up with the grey matter, but merely reached it, approximating at one point and departing at another, forming loops in the medulla spinalis. These nerves and their loops Granger had demonstrated to Tiedemann and Müller, when visiting Vienna.

Mr Proctor was instructed by Mr Pilcher's able exposition; yet daily experience convinced him, that the action of the stomach and of the salivary glands, was much under the influence of the brain and of the mind. It was perhaps possible, that the medulla spinalis and the ganglia were reservoirs for nervous influence, as had been suggested during the discussion.

Dr Bennet remarked that there existed much truth in the doctrine of excito-motory action, but that this view failed to explain some facts. Dr Marshall Hall had proved, that the medulla spinalis elaborated nervous influence. Mr Pilcher's views respecting grey matter, were entirely theoretical. It had been advanced by some that the grey matter of the brain, was more particularly connected with the mind.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Wednesday, 1st December 1841.

1. Dr A. Watson read a paper giving an account of several cases of sudden death from chronic disease of the larynx. Four cases were also detailed where the operation of tracheotomy had been successfully resorted to, saving the patients from threatened suffocation. Another case was added in which tracheotomy had been performed seven times.

2. Mr Spence detailed a case of death from the introduction of a plumb stone into the respiratory passages, where tracheotomy had been performed without success, the foreign body having been impacted in the left bronchus. Mr Spence's paper was published in our last number, p. 24.

3. Dr John R. Russell read a summary of the views of Professor Rokitansky of Vienna, on the pathology of continued fever.

The first division of the paper contained an account of the chief symptoms of the typhus fever which prevailed in Vienna. These were, 1st, Its generally commencing with epistaxis. 2d, The almost invariable occurrence of tenderness over the iliac region, and diarrhœa. 3d, Discharge of blood per anum occurring later in the disease. 4th, Delirium slighter than in the fever of this country. 5th, Exanthematous eruption comparatively rare. 6th, Fatal termination in one-third of the cases treated in general hospitals. The second division of the paper contained the views of

Dr Rokitansky on its morbid anatomy. He describes a peculiar morbid product, in many features analogous to cancerous degeneration, as being deposited in various tissues. The most common seat of this deposit is the mucous membrane of the ileum, and in the colon, mucous membrane of the bronchi, and lymphatic glands. The deposition of this product is preceded by a state of violent congestion of the vessels of the part affected. The product, after its deposit, undergoes a distinct series of changes. It may either assume the appearance of a greyish marrow-like substance,—become converted into a scurf which shrinks together and is thrown off,—or it may degenerate into a loose vascular structure, a source of profuse hemorrhage, and be thrown off leaving the proper typhous ulcer. In the lungs and bronchi, the process is arrested in the stage of congestion. In the exanthematic typhus of this country, Rokitansky conceives that this process runs its course in the blood without localising itself.

Mr Goodsir remarked that he had observed a similar deposit in an epidemic fever occurring at Anstruther. He had examined it under the microscope, but did not find it to bear any analogy to cancerous degeneration.

Dr Henderson remarked that epistaxis was a more common premonitory symptom of fever in this country than was generally supposed.

4. Mr Goodsir exhibited under the microscope specimens of *Trichina Spiralis*, an entozoon infesting the muscles of the human body. Mr Goodsir had directed his observations chiefly to the phenomena connected with the reproduction of the animal.

The Society then proceeded to elect the office-bearers for the ensuing Session. A list of them was given in our last number.

Wednesday, 5th January, 1842.

1. Professor Simpson read a communication relative to the history of the first introduction and diffusion of syphilis in Scotland at the end of the fifteenth century. He cited official edicts of the Aberdeen magistrates, and of the king's privy council respecting the new "infirmitez,"—issued during the currency of 1497, with various casual notices of the distemper from the contemporaneous writings of Dunbar, Lyndsay, Inglis, &c. In these early times the disease passed in Scotland under the various names of grand gore, gorre, pockis, spaynie pockis, French infirmitez, &c. Dr S. alluded to an entry in 1502–3 in the privy purse expense book of Elizabeth, Queen of Henry VII. as containing the earliest notice of the disease in England, that he had been able to meet with. The first Scottish edicts were made with a view of arresting the progress of the disease, and ordained the application of a hot key of iron to the cheek, as the punishment of those who infringed their regulations. The Aberdeen edict was dated only four years and a month after the return of Columbus from his first voyage to Hispaniola. This edict was remarkable as being founded on the idea that the new malady disseminated itself by impure sexual intercourse —while, as is well known, it was not for several years afterwards, that this opinion of its mode of propagation, was adopted by the medical men and authors of these times. The Edinburgh regulations presupposed the disease to be communicable even by the persons that took the cure upon them, though these persons were themselves uninfected. Lastly, Dr S. proceeded to show from the old data which he had adduced, that syphilis was new to this part of Europe, at the date of the edicts, that it was hence different on the one hand from gonorrhœa, and on the other from the leprosy of the middle ages,—both of which affections were well known in this country before the era in question.

Dr Robert Hamilton remarked that, from inquiries which he had made on a former occasion, he had come to the conclusion, that in the earlier periods, when the disease was supposed to prevail, it was not the real syphilis of modern times, but a pseudo-venereal affection, capable of being propagated, not only by sexual intercourse, but by infection in other ways, as occurs in the instance of sibbens, which accounted for the panic as to its virulence, which prevailed in Europe in the fifteenth century, and subsequent times.

Professor Simpson remarked on the difficulties which attended the decision of the real nature of the disease which formed the subject of his paper. He suggested

the importance of full inquiries being instituted as to the history and present state of sibbens.

2. Dr John Scott detailed some cases of a peculiar nervous affection of the respiratory organs, somewhat resembling in symptoms some cases formerly read to the society by Dr Gairdner, and lately published in the Edinburgh Medical and Surgical Journal. Two of these cases occurred in females in delicate health. Two or three days after the cessation of the catamenial periods, a spasmodic state of the respiration occurred, marked by two or three hurried inspirations, which were succeeded by a long deep inspiration, attended by a loud crowing noise. These paroxysms usually lasted for several days. In both cases immediate relief had generally been obtained from blood-letting, the frequent employment of which had induced a necessity for its repetition, to an extent which had greatly interfered with the general health of the patients. The portions of blood latterly drawn were in both instances observed to be very deficient in fibrine and red globules. In the treatment of these cases Dr Scott had endeavoured to break this habit by gradually diminishing the quantity taken at each blood-letting, and substituted by degrees the employment of tonics, with regulation of the diet. In one of the cases this plan proved successful. The other case was lost sight of, after some improvement had taken place in the general symptoms. Dr Scott also narrated a case of severe fixed neuralgic pain of the side, accompanied by a spasmodic affection of the arm, occurring in a young boy. Local and general bleedings, blisters, and other remedies, had proved ineffectual; opium had been used in large quantity, but without relieving the pain. On one occasion the patient had taken in one day 275 minims of Battley's sedative solution. Musk in large doses, (half a drachm in the day,) had likewise failed. On one occasion, after a large dose of musk, a semicomatose state was induced, with inability to swallow, which lasted for fourteen hours. After a variety of treatment, relief was obtained from the use of the arsenical solution, and complete recovery followed.

3. At the period for medical news, Mr Spence described and exhibited the preparation of a case where the right kidney was found much enlarged, whilst on the left side both kidneys and ureter were wanting. A large cyst was found between the bladder and rectum, which communicated with the vas deferens, and appeared to be one of the vesiculæ seminales enormously distended. The cyst bore the appearances of inflammatory action, and was filled with a putty-like substance, in which no traces of seminal animalcules could be perceived.

Dr Spittal, F.R.C.P., Dr John R. Russell, and Dr Archibald Douglas, F.R.C.S.E., were elected ordinary members.

Mr W. Walker was elected a member of council in room of Dr Omond, appointed treasurer.

WESTMINSTER MEDICAL SOCIETY.

Saturday, October 30, 1841.

1. *Discussion on Asphyxia, and its Treatment.—Alleged important Errors in the Treatment of Persons apparently Drowned, by the Royal Humane Society.*

Mr Streeter thought that asphyxia in children depended on three causes:—pressure on the neck of the child by the funis; a comatose state of brain; and the collection of thick mucus about the upper part of the throat and air passages. These would require different kinds of treatment. He thought experiments had shown, that in the infant a much longer interval could take place between the cessation of the placental communication and the termination of life, than in the adult between the commencement of asphyxia and its fatal results; and that, therefore, the employment of artificial respiration could be resorted to at a later period with success in the former than the latter. He then gave the description of two cases in which persons had attempted suicide by drowning, and detailed at considerable length a case of Cæsarean section, performed by Mr Green, in Guy's Hospital, and related by that surgeon in the Medico-Chirurgical Transactions, vol. xii. He detailed these cases with the view of showing how necessary it was to be unsparing in our efforts to save life.

Dr Reid had seen the mode of treating asphyxia by giving the infant two or three sharp smacks on the thorax, succeed when all other means had failed.

Dr Guy, in some experiments on the fœtal lungs, with another object in view, however, had found in still-born children, who had never afterwards breathed, that the lungs were gorged with blood. He believed this might be a reason why they did not breathe, and might raise the question as to the propriety of abstracting blood. Two fœtuses (twins) had been exhibited to the Society two or three sessions since: one of these had breathed, the other not. The one that had breathed had much less blood in its lungs than the other. He thought Dr M. Hall's plan of slapping the chest in preference to any other part of the child the most reasonable plan of proceeding, the object being to excite the fibres of the respiratory muscles.

Mr Snow said that he had used the term asphyxia in the sense to which it is now generally restricted, namely, to designate the pathological state occasioned by the stoppage of the respiration. He had distinguished between the asphyxia which arises from the arrest of the placental respiration before the respiration by the lungs can be established, and that which might take place in after-life from stoppage of the ordinary respiration; and since the phenomena were the same, whether the respiration were stopped by drowning, hanging, suffocation, or in any other way, he knew of no other distinction it was necessary to make, except, indeed, to point out the gradual asphyxia which might arise from a deficiency of oxygen in the air respired. But since this had never occurred to the human being, except in conjunction with carbonic acid gas, which really produced a specific effect of its own, it might be conveniently separated from asphyxia, and considered under the head of poisonous gases, and accordingly he had not included it in the subjects of his paper. He must again express his conviction that blowing with the breath was a very improper means of performing artificial respiration, for Gmelin had found that the mean result of the experiments of a number of physiologists gave nearly six per cent. as the quantity of carbonic acid contained in air which had been once breathed; and in some experiments which he (Mr S.) had performed three years ago, and reported to that Society, (See *Lancet*, p. 93, vol. ii., 1838–39), he had found that animals soon died in an atmosphere where five per cent. of the oxygen was replaced by as much carbonic acid, and that where but three per cent. was so replaced they soon became ill, and ultimately died. He was aware that some children had been restored by inflating the lungs with the breath, but any inflation, however imperfect, with fresh air, must be much superior. Respecting the instrument he had introduced to the notice of the Society, he would only read a passage from a paper by John Hunter, in which he had recommended a pair of bellows for artificial respiration, the action of which was precisely the same as that of Mr Read's instrument:—"A pair of bellows so contrived with two separate cavities, that, by opening them, when applied to the nostrils or mouth of a patient, one cavity may be filled with common air, and the other with air sucked out from the lungs, and by shutting them again the common air will be thrown into the lungs, and that sucked out of the lungs discharged into the room." This paper, which he had met with since the last meeting, was in vol. lxvi., part ii. of the Philosophical Transactions, and entitled, "Proposals for the Recovery of Persons apparently Drowned." He had expressed his opinion to the Society, that in all cases of suspended animation, warmth ought not to be applied until respiration were first restored; but by what Mr Woolley stated at the previous meeting, he found that the practice of the Royal Humane Society differed more widely from these views than he had previously believed; for it appeared that in the receiving-house in Hyde Park, they placed an asphyxiated person immediately in a bath, at 100 degrees, without using artificial respiration, although they had the means at hand. He would prove that this treatment was highly injurious, and felt confident it would accordingly be abandoned in favour of one more judicious. It would only be necessary to bring some of the many proofs he could advance in favour of this position. Dr Edwards had shown, by a numerous set of experiments, that the progress of asphyxia was much more rapid in all classes of animals at blood-heat, than at inferior temperatures. The same physiologist had likewise shown that the quantity of oxygen consumed, and the necessity for respiration, kept a direct ratio with the development of animal heat; and likewise, that the application of heat to the body increased its power of developing caloric, whilst the abstraction of heat by means of any cold medium had a contrary effect. Every one

might observe that when the body was heated by exercise, or by any other cause, the necessity for respiration became much increased, and that breathing could not be stopped only for a few seconds, without inconvenience, and even danger. Now, it was the stoppage of respiration that was the cause of mischief in drowning, as in every case of asphyxia; and withdrawing a person from the water would be of no avail unless respiration were re-established, for otherwise the process of asphyxia would be going on; therefore the warm bath, by putting the system in a state which required more oxygen, would hurry on the process of death, if it did not at once cause the acts of respiration to commence. But the mechanical acts of breathing belonged to animal, not to organic life; they were, indeed, almost voluntary acts, and the warm bath, to rouse these, must do it through the nervous system. In the progress of asphyxia, however, voluntary motion ceased first, next the convulsive motions, and the period when they might be excited by stimuli ceased; and the action of the heart, a languid circulation, and some slow organic changes, were the last signs of life to depart. It was clear, then, that the warm bath could only restore some persons not far advanced in asphyxia, who might easily be restored without it; whilst, in other cases, it would extinguish those small sparks of vitality they were anxious to cherish and light up into a flame. They had that fearful proof of the correctness of these views from the statements of Mr Woolley, that he had not found artificial respiration of benefit after the warm bath failed to restore life. Mr Woolley had told them that five or six minutes was the longest period he had ever known any person to remain under water who was afterwards restored; but in the early reports of the Royal Humane Society, when only warm blankets, and similar less energetic means of applying warmth were resorted to, several persons were resuscitated after being more than ten minutes submerged, two or three persons more than twenty minutes; and in one of these cases there was the clearest proof that the person must have been at least twenty minutes under the water. In an early report of the Society at Amsterdam for the recovery of persons drowned, (the first society of the kind which was formed,) it was stated, that of the persons who recovered, many had been but a few minutes under water, some a quarter of an hour, others half an hour, and one a whole hour. He knew no reason why these accounts, reported by scientific people, ought to be disputed. We heard often in our own days, of persons being restored after lying some time before assistance was procured; and, if a person might remain five minutes under water, and ten more before any kind of breathing was set up, he might, undoubtedly, remain fifteen minutes submerged, with an equal chance of recovery. It would always be a most dangerous state, when total insensibility was produced by asphyxia; but we ought not to despair even when it had continued a length of time. Sir Benjamin Brodie had stated that if the heart had ceased to act in asphyxia, or even ceased to act sufficiently to circulate the blood, it would be impossible to restore its action by artificial respiration. He (Mr S.) had related in his paper, that he, in some measure, restored the action of the heart in a guinea-pig that had been dead an hour, by artificial respiration; and he could now bring forward the evidence of one of the greatest physiologists that ever lived, on this subject, that of John Hunter, in the paper already referred to:—"The muzzle of these bellows was fixed into the trachea of a dog, and by working them he was kept perfectly alive. While this artificial respiration was going on, the sternum was taken off, so as to expose the heart and lungs; the heart continued to act as before, only the frequency of its action was greatly increased. Mr Hunter then stopped the motion of the bellows, and observed the heart become gradually weaker, and less frequent in the contractions, till it left off moving altogether; but, by renewing the operation, the heart began again to move, at first very faintly, and with longer intermissions, but by continuing the artificial breathing, the motion of the heart became as frequent and as strong as before. This process was repeated upon the same dog ten times, sometimes stopping for five, eight, or ten minutes. Mr Hunter observed, that every time he left off working the bellows, the heart became extremely turgid with blood, and the blood in the left side became as dark as that in the right." This experiment of Hunter's proved, at least, that the heart might in some cases be restored to action by artificial respiration after it had ceased to beat. But even supposing Sir B. Brodie's opinion to be correct, it would not justify the use of the warm bath in the first instance, since the heart would continue to act after the muscles of animal life had

lost their irritability. The very slow and gradual manner in which respiration became renewed after apparent death, ought to deter one from at once placing the patient in a state in which he must either have a full and extensive respiration or perish. He would quote another passage from the same paper of John Hunter, in which that great man seemed, by his wonderful penetration, to have foreseen the laws of animal heat, since made known by Dr Edwards. After alluding to artificial respiration, it is stated,—"While this business is going on an assistant should prepare bed-clothes, carefully brought to a proper degree of heat. Heat our author considers as congenial with the living principle—increasing the necessity of action, it increases action; cold, on the other hand, lessens the necessity, and, of course, the action is diminished; to a due degree of heat, therefore, the living principle owes its vigour. From experience, he says, it appears to be a law in animal bodies, that the degree of heat should bear a proportion to the quantity of life; as this is weakened this proportion requires great accuracy, while greater powers of life allow it greater latitudes." The medical members of the committee of the Royal Humane Society had come to a conclusion which, to him (Mr S.), was perfectly astounding; in the report for 1840 they stated, "It is their opinion that the period in cases of asphyxia, when artificial respiration might be successful in restoring life is very short, and scarcely more than momentary; and as it but rarely happens that such means can be applied at the precise moment, artificial respiration should be considered as a secondary means." The imperious necessity of respiration every moment of our lives pointed out as the object to be first effected in every case of asphyxia; and the fact, that the changes in the blood, which constitute the essential part of respiration, might take place after death, and even out of the body, proved that artificial respiration was the measure which might be useful at a later period in asphyxia than any other. The servants of the Royal Humane Society should have an instrument for artificial respiration in the boat with them, and use it the instant a body was got out of the water, without power to breathe; the cold, if not very intense, so far from being prejudicial, would be favourable to the maintenance of any latent vitality which remained. In cases where an apparatus was not at hand, artificial respiration should be performed in the mode proposed by Mr Dalrymple, *i.e.*, by tearing a sheet into the form of a many-tailed bandage, and alternately compressing and setting free the chest by this means. Rubbing the bodies of persons apparently dead had proved useful, he considered, by the pressure it occasioned on the chest and abdomen, and which might set up a slight current of air to and from the lungs. Suction applied to the mouth or nostrils, from the idea that there was water in the trachea and lungs, and since discontinued, when that idea was found to be erroneous, was useful, from the partial vacuum occasioned in the chest, which became refilled by fresh air; and it was from hearing of a successful instance of this practice that Mr Read invented his instrument. These mechanical means of causing respiration would not be available, however, in a newborn child, where the lungs were empty and the chest collapsed; and in their case, therefore, the instrument was the more necessary. He believed that the benefit which used to be observed from fumigation of tobacco, introduced by the rectum, arose from the air introduced with the tobacco smoke, oxygenating the blood in the vascular mucous lining of the alimentary canal; and he thought that alternately injecting air, and allowing it to escape by a flexible tube, might set up an intestinal respiration which might be of some use in the absence of means to establish respiration by the lungs. He made a few observations on other auxiliary measures towards resuscitation.

Saturday, Nov. 6, 1841.

Case of Sudden Death.—Emphysema and Heart Disease.—Mr Robert Dunn related the following case:—The patient was a man about sixty-five years of age, and subject to attacks of spasmodic asthma. For many years in the early part of his life he had been in the army, suffering all the vicissitudes and hardships of a soldier's life. For the last twenty years or upwards, he had kept an eating-house: he took an active part in the business, and for some hours a-day was exposed to the effects of steam and a high temperature. He was affected with a winter's cough, and seldom got through the cold weather without an attack of bronchitis. On the last occasion he had been ill for more than a week, when Mr Dunn was sent for. He had severe and extensive bronchitis. The cough was troublesome and frequent, coming on in fits; and the dyspnœa at times was distressing. The expectoration was not very

copious or free, and the matter brought up was viscid, and somewhat muco-purulent. The cough had this peculiarity,—that during the paroxysm, and whilst making violent expiratory efforts, the respiration became convulsive, the dyspnœa very distressing, and the countenance was often suffused with a livid hue. He was put under the usual antiphlogistic treatment of antimonials and salines, with counter-irritation. On the fourth day of Mr Dunn's attendance, although the patient was going on favourably, Dr Johnson was called in consultation, and he thought that, although the case was a severe one, it would do well. The same night, between twelve and one o'clock, the patient insisted upon getting up and going down stairs. His mind was wandering, and he fancied thieves were in the house. His bed-room was on the second floor, and from this he went down to the cold kitchen. It was with very great difficulty that he could reach his bed-room again. He was completely exhausted; and, after getting up to his room, he went off in what appeared to his wife to be a fainting fit, and died in a state of asphyxia. Mr Dunn, being sent for, soon arrived, but the patient was quite dead, his face being somewhat livid.

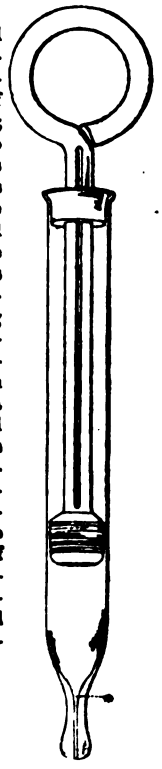
Mr Dunn obtained an after-death examination: he had not been able before death to detect any disease of the heart. The examination proved this was the case; for, with the exception of being rather flabby, the organ was healthy: it contained a very small quantity of blood. On opening the chest, the cavity seemed to be too small for the lungs, as they rose up out of it: they were emphysematous. On the right lung, more especially, the pulmonary vesicles upon the surface, about the margin, and on the under part, were distended, varying in size from that of a millet-seed to that of a hazel-nut, or even larger. The bronchial tubes were injected, and the mucus in the bronchi was viscid. At the bifurcation of the trachea the bronchial glands were enlarged. On each side, immediately behind the bronchus, was a gland of considerable size: that behind the right bronchus was the largest, being about the size of a large hazel-nut, and containing a hard, calcareous matter. This bronchus was flattened by the gland, as though the pressure had been persistent. Mr Dunn thought that the situation of this gland, which caused a projection into the interior of the bronchial tube, must have materially interrupted the free egress of the air from the lungs, and was in all probability the exciting cause of the emphysema, which disease might have been rendered fatal by the sudden change of temperature to which the patient had been exposed.

Dr J. Johnson questioned whether the tumour had anything to do with the production of the emphysema. In a case in which there was no impediment in the air-passages, but in which asthma had existed for many years, he had found extensive emphysema of the lungs, many of the air-cells on the surface being as large as pigeons' eggs. Dr Samuel Johnson's lungs were in the like condition. He thought the sudden death in Mr Dunn's case was more likely to be referable to the flabby state of the heart, and the exertion of going up and down stairs.

2. *Case of Consumption* (?) *Cured.*—Dr James Thomson read a paper, in which, after some preliminary remarks on the usual symptoms of phthisis pulmonalis, he detailed the case of a lady who had a variety of symptoms, which he considered were indicative of the presence of tubercles in the lungs. Among the most prominent of these symptoms were atrophy, night-sweats, hemoptysis, or dullness on percussion over part of the chest, and a mucous *râle*. Unfortunately, the physical signs were not detailed with sufficient minuteness to enable any one present to decide whether the case was really one of phthisis; its value, therefore, was much diminished. Whatever the real disease was, however, a cure was effected by counter-irritation, followed by a seton in the side, the internal use of hyoscyamus, belladonna, prussic acid, and creasote.

Saturday, November 13, 1841.

1. *Amadou.*—Mr Wetherfield exhibited several very beautiful specimens of surgical apparatus formed of amadou, in illustration of his recent communications to *The Lancet* on the subject. This material appears exceedingly adapted, by its softness and elasticity, to effect the objects anticipated by its proposer. Surgeons have long had occasion to complain of the irritating hardness of many of the compresses prepared for making pressure in various ways. In the amadou every source of inconvenience is removed, and the facility with which it may be cut and adapted at the instant to the form of the parts requiring compression, will render it of great value in the hands of the practitioner.



2. *New Syringe of Glass, by Wm. Acton, Esq.*—Mr Acton exhibited a new syringe, formed entirely of glass, for the purpose of injecting the solution of nitrate of silver into the urethra. He considered the advantages of the instrument, to be: 1st, Its not allowing of the decomposition of the nitrate of silver, as pewter syringes did; 2ndly, It enabled us to see the quantity of fluid we were about to inject; 3dly, That his syringe had a bulb at its extremity and was not pointed, and was therefore less liable to injure the inflamed mucous membrane; 4thly, Pressure was easily made upon the bulb of the syringe, which effectually prevented the escape of the fluid injected into the canal; 5thly, In the common syringe the apex of the cone was at the extremity of the instrument, in the present one it was within half an inch of its extremity, and the fluid might be consequently thrown to a great distance without the stream becoming divided or scattered; this he considered as no inconsiderable benefit, when the fluid was required to be thrown far into the urethra, as in old standing gleets. The present tube held half an ounce, which was more than sufficient: he found that the urethra would contain but a small quantity of fluid. When a syringeful was injected, patients complained of pain, and a large quantity was followed immediately by slight hemorrhage and scalding in passing water. The directions he gave for injecting were, that the patient should be seated on the edge of a bed, or be in the erect position; the glans penis should be moderately pressed by the circle formed by bringing the point of the index finger to the first joint of the thumb of the left hand. The bulb of the syringe might be introduced a quarter of an inch into the urethra, and the piston forced down rapidly by the index finger of the right hand, and allowed to remain a few seconds; in this way no fluid would escape between the instrument and the urethra.

FRENCH ACADEMY OF SCIENCE.

3d January 1842.

Election of President and Vice-President.—M. Poucelet was chosen president. 42 voted for the vice-president:—32 for M. Dumas; 6 for M. Beudent; 1 for M. Duméril; 1 for M. Gasparin; 1 for M. Magendie, and 1 for M. Godirhaux. M. Dumas was therefore chosen.

2. *Amputation at the Thigh Joint.*—M. Larrey, in his own name, and in that of M. Double, gave in a report on a case of amputation of the inferior extremity at the thigh joint, performed by M. Sédillot, and which is the first successful one which has occurred in Paris. The patient was a fusileer of the seventh regiment of the line, 28 years of age, of good constitution, who, in consequence of a fall from a height in July 1837, received a comminuted fracture of the right femur, complicated with wounds of the soft parts. He was taken in a cart to the hospital of Vannes, distant twelve leagues, where the thigh was found shortened six centimetres, and covered with gangrenous phlyctenæ. Attempts at reduction were followed by intense inflammation: an abscess formed, and various splinters and fragments came out. Notwithstanding of this, the wound closed up, but the knee being threatened with anchylosis, the patient was sent to the waters of Bourbonne. In the journey he had the same limb again broken by the giving way of the plank which served for a seat in the cart, in which he was travelling. This second accident was followed by serious consequences, similar to those which happened on the first occasion, so that he could not be removed to Paris till the beginning of the year 1840, when he came under the charge of M. Sédillot. That surgeon found the limb atrophied, immoveable, and shortened four centimetres. The thigh was covered with cicatrices, and there were fistulous openings, through which, by introducing a sound, both caries and necrosis of the femur were detected. Although M. Sédillot felt sufficiently satisfied of the severity of

the disease, he called to a consultation M. Larrey and his colleagues. It was unanimously decided, that amputation at the thigh joint was necessary. The operation was accordingly performed on the 7th of August. The operator formed a large flap from the anterior and superior parts of the thigh, including in it the femoral artery, which he caused to be compressed at its passage under the crural arch, and which was tied after the amputation was finished. The posterior flap he formed from the muscles of the hips. The two flaps were brought together by means of the twisted suture. During the first 24 hours all went on very well; but the inflammation then became so great as to render it necessary to cut the stitches. After this, however, the inflammation ceased, and the wound soon passed through the different stages of suppuration, cleaning, and cicatrization. At the end of 50 days the cure was complete, and at the present time he enjoys good health. M. Sédillot proposes the questions:—May this operation be performed at first, and is it not better, as in the present case, to wait till the dangerous symptoms have passed away? He decides in favour of the latter method, and insists, *first*, upon the bad effects produced by the commotion of the abdominal viscera produced by the cause of the accident; *second*, upon the sudden flow back of blood upon the heart, caused by the ligature of large vessels; and, *third*, upon the nervous spasm which follows the sudden section of the large nerves of the thigh.

The reporter (M. Larrey), replies to the *first* assertion, that the commotion is only instantaneous, and that if the viscera have been contused, death supervenes immediately, or is clearly announced by symptoms. To the *second*, he answers, that the primitive effects of the backward flow of blood upon the heart following the ligature of great vessels have been exaggerated; and, lastly, to the *third* he replies, that it can make no difference whether the nerves be divided in the first hour after the injury, or during the subsequent disarticulation of the limb. He concludes, that in these cases, death is the consequence of the loss of blood during the operation; consequently he advises, that in the disarticulation of the lower extremity, as in the operation of amputation at the shoulder-joint, the vessels be so commanded as to prevent the loss of a single gramme of blood. M. Larrey mentioned, that he had twice performed this operation: in the first case, when cicatrization was completed, the patient died from cold and misery; and the other, just when the cure was completed, died from similar causes. In conclusion, the reporter summed up by stating, that the primitive amputation of the thigh at its articulation with the trunk may be practised in cases of recent injury, as well as of chronic diseases; and that if success does not appear similar in both cases, it arises from the severity of the cause necessitating the operation.

3. *New Treatment of Dropsy.*—M. Baudens announced, that he had discovered a new method of curing effusions in the cavities of serous membranes, which consisted in the establishment of a fistula for the purpose of giving issue to the effused fluid as fast as it formed. He stated, that he had already, by this means, cured more than 50 cases of hydrocele, much more rapidly than by the ordinary mthods, and that he had only once been obliged to repeat his operation. He practised the same method successfully in two cases of effusion into the peritoneum.

M. Serres proposed, that the consideration of the remarkable views of M. Baudens should be referred to a commission, whereupon MM. Serres, Roux, and Breschet, were ordered to report upon them.

10*th January* 1842.

1. *Election.*—M. Payen was elected to the vacant place in the section of rural economy. 52 members voted:—45 for M. Payen; 3 for M. Villemourin; 1 for M. Leclerc Thouin; and there was one blank billet. M. Payen's election will be submitted to the king to receive his approbation.

2. *Prize Committees* were nominated.

3. *Substitute for Manna.*—M. Biot noticed a substance having the appearance of natural manna, and introduced as such into commerce for medicinal purposes. He was ignorant of its nature, but it differed essentially from manna; but from microscopic examination he could not decide that it contained no mannite, as M. Pelouse

maintained from his chemical experiments. Experiments with doses of this substance were quite safe, and ought to be performed for the purpose of ascertaining its properties, as it might turn ought to be an excellent laxative, and a good substitute for manna.

4. *The Plague.— Quarantine.*—The minister of agriculture and commerce, conceiving that it would be proper to examine the sanatory regulations regarding the plague, addressed, some time ago, queries on the subject to the consuls of France, Cyprus, Morocco, Tunis, Tripoli, Smyrna, and Malta. The answers received from these functionaries he now laid before the Academy. They were referred to a commission, to report on the state of the quarantines. MM. Marchand, Levat, and Pezzoni, residing at Constantinople, wrote to the Academy, requesting that they might be allowed to give in some information which they had collected on the subject, which was agreed to; and thanks were given them for their offer.

FRENCH ACADEMY OF MEDICINE.

4th January 1842.

1. The president read the discourse which he addressed to the king on new year's day, with his majesty's reply, in which the following passage was remarked :—"*Je dois avoir une estime toute particulière pour la médecine, puisque j'ai moi-même autrefois étudié cette science, et appliqué les principes dans le service des hôpitaux.*"

2. *Parallel between the works of ancient and modern physicians.*—On this subject there was a long debate.

3. *Perforation of the bladder of a horse by a bony tumour.*—M. Bouley exhibited a preparation, which showed the bladder perforated by a pyramidal bony eminence, arising from the internal surface of the symphisis of the pubis. He stated that there was no part of the skeleton of more variable formation than the symphisis of the pubis. Its surface is sometimes hollowed out, is at other times projecting, and occasionally bears nipple-like processes.

4. *Lithrotity in Children.*—M. Ségallas said, that having hitherto succeeded in applying lithotrity at every age, he would not abandon his opinion as to its being a proper operation for children, until forced by experience to do so. MM. Viricel of Lyons, Payen of Aix, and Vidal of Cassis, had lately declared in favour of this practice. In support of his views, M. Ségallas exhibited to the Academy a child aged 23 months, on whom he had performed this operation. The calculus measured fourteen lines at the point where it was seized in the instrument; and probably it had not been grasped in its greatest diameter. No unpleasant symptoms occurred during or subsequent to the several operations, by which the stone was destroyed; and the child, now 26 months old, enjoys perfect health.

11th January 1842.

During the whole sederunt, the Academy were occupied with obstetric questions, entangled with acrimonious personalities, and not of sufficient importance to require reporting.

MISCELLANEOUS MEDICAL NEWS.

NUTS FOR MEDICAL REFORMERS.

SIR,—Through the medium of your excellent Journal, I beg to lay before the profession a document clearly setting forth the inconveniencies to which northern diplomatists, on crossing the Tweed, are sometimes exposed, hoping it will receive that attention to which it is, in my opinion, deservedly entitled. I am, truly yours,

A. ALLISON.

To Dr CORMACK, Edinburgh.

The following is a reply from the Poor Law Commissioners, to a communication from Mr Barstow, respecting the legality of Mr Robert M'Lachlan's *medical* appointment to two districts of the Halifax Union.

"POOR LAW COMMISSION OFFICE,
"5510 B. "Somerset House, 27th May 1841.

"*Medical Appointment.*

"SIR,—The Poor Law Commissioners acknowledge the receipt of your letter of the 6th instant, forwarding to them a return of the names and qualifications of the medical officers appointed for the Halifax Union for the current year. The Commissioners observe, that the qualification of Mr Robert M'Lachlan, the medical officer for the Shelf and Queen's Head districts, is stated to be a diploma from the Royal College of Surgeons, Edinburgh, to practise surgery, pharmacy, and midwifery.

"The Commissioners desire to point, that in order to be qualified to be a medical officer in a union, a person must be duly licensed to practice as a medical man (Poor Law Amendment Act, section 109.) The Commissioners consider that to be duly licensed to practise as a medical man in England and Wales, a person must derive authority or license to practise from some body competent to confer a special authority in England and Wales, unless he should have been in practice as an apothecary before the year 1815. They therefore consider, 1st, The licentiates of the Apothecaries' Company; 2d, Members of the College of Surgeons; 3d, Persons having the diploma of the College of Physicians; 4th, Doctors of Medicine having the degree conferred on them by any competent authority in England and Wales, or by the universities, or by the Archbishop of Canterbury, to be duly licensed to practise in England and Wales.

"But they do not understand that bodies or persons having the power to confer degrees or license, or authority to practise in other places than in England and Wales, can confer on any person the character required by the Poor Law Amendment Act, as the qualification of medical officer.

"Entertaining these views, the commissioners are of opinion, that as Mr Robert M'Lachlan appears to have no English qualification, the guardians should proceed to elect a medical man possessing a qualification required by the Poor Law Amendment Act, for the districts for which he has been appointed. Signed, by order of the Board,

E. CHADWICK, Secretary.

To CHAS. BARSTOW, Esq.
Clerk to the Guardians, Halifax.

"POOR LAW COMMISSION OFFICE,
"11081, B. "Somerset House, 26th October 1841.

"*Qualification of Medical Officer.*

"SIR,—I am directed by the Poor Law Commissioners to acknowledge the receipt of your letter of the 22d instant, in which you inquire whether a member of the Royal College of Surgeons of Edinburgh is qualified to hold an appointment as a medical officer under the Poor Law Amendment Act.

"In reply I am to inform you, that the Commissioners are advised that a diploma from the Royal College of Surgeons of Edinburgh would not so far qualify the person holding it to practise in England, as to bring him within the definition of the term 'medical officer,' used in the 109th section of the Poor Law Amendment Act. I have the honour to be, Sir, your most obedient servant,

"E. CHADWICK."

"ANDW. ALLISON, Esq. Surgeon, Kilham,
"N. Driffield."

Although I am not personally aggrieved by the foregoing intimation, my qualifications being ample, still I cannot, without deep, and I trust patriotic concern, view the humiliating predicament in which Scottish licentiates south of the Tweed are placed. It is painful to see them in the eye of the law ranking with the cow-leech and the charlatan.

Allow me to subjoin two notes in reference to the manner in which "*the Right Rev. Father in God his Grace the Archbishop of Canterbury*," is pleased to confer the degree of M.D. upon those whom Sir Henry shall deem worthy, which diploma the Poor Law Commissioners virtually declare, shall authorize its possessor to practise surgery *and supply drugs*, by virtue of his appointment to the office of parish doctor. "Tell it not in Gath," but inform Mr Upton, the honourable and talented law-agent to the Society of Apothecaries; and the Commissioners, forsooth, shall find that members of the London College and English universities possess no *legal claim* or *right of preferment* over those of the Edinburgh College or Scottish universities. Let the members of either, in England or Wales, exercise the functions of an apothecary, or in any way infringe upon the act of 1815, and he will speedily discover, that the almost absolute arm of Somerset House is, in this case, destitute of protection.

The following documents speak for themselves.

"KILHAM, N. DRIFFIELD, YORKSHIRE,
"29th October 1841.

"MY LORD,—I shall feel obliged if your Grace would favour me with a statement of the conditions upon which your Lordship is pleased to confer the degree of M.D. upon persons seeking that honour, whether by examination or otherwise? if by examination, the subjects of preparation, and the course of education constituting grounds of admission to the required ordeal. I have the honour to be, my Lord, your Lordship's most obedient servant,

"ANDW. ALLISON, Surgeon."

"To his Grace the Archbishop of Canterbury,
London."

"LAMBETH, Nov. 1, 1841.

"The Archbishop of Canterbury presents his compliments to Mr Allison, and informs him, that it is his rule to confer the degree of M.D. only on the special recommendation of Sir Henry Halford, the president of the College of Physicians."

[In Scotland, no degrees in medicine are now granted till after an examination; and we believe that in all of the northern universities this trial is ample and fair, the interests of the public and of candidates being both duly respected.]

HOMŒOPATHY.

"During a visit to Paris, Dr Ure met the founder of the homœopathic system, who undertook to cure him of an obstinate constipation, by a course of infinitesimal doses. He gave him a portion of powder on the point of a pen-knife, which was to be dissolved in fifteen ounces of water, and one ounce of brandy—a teaspoonful of which was to be added to a tumbler of water. A teaspoonful of this latter was to be taken every morning, and the remainder thrown away. He did not hesitate to try the remedy, but had reason to regret following the advice which accompanied it, which was to use no remedy to remove the constipation. In the course of a few days the symptoms became so alarming, that he narrowly escaped with his life, and has never entrusted himself to a homœopathic doctor since that time.—*Pharm. Trans.* Oct. 1, 1841.

BOOKS RECEIVED.

1. Mémoire sur la Révulsion Morale dans le traitement de la Folie. Par F. Leuret, Médecin-en-chef à l'Hospice de Bicêtre, &c. Précédé du Rapport fait à l'Académie Royale de Médecine, le 1er Juin 1841, par MM. Louis, Pariset, et Double. 4to, pp. 33. Paris 1841. *Vide* Periscope.
2. On the Employment of the Microscope in Medical Studies: a Lecture introductory to a Course of Histiology. By John Hughes Bennett, M.D., &c. 8vo, pp. 27. Edinburgh, Maclachlan, Stewart, & Co., 1841.

The author urges the importance of the study of microscopic anatomy to the practical physician, as well as to the professed cultivators of anatomy and physiology. The pamphlet is well written; and we shall present our readers with some extracts from it in next Number.

3. A Report on the facts and circumstances relating to a case of Compound Fracture, and prosecution for Malpractice; in which William Smith was plaintiff, and Drs Goodyear and Hyde were defendants, at Cortland village, Cortland county, New York, March 1841; comprising statements of the case by several medical gentleman, together with notes and comments on the testimony. By A. R. Shipman, M.D. 8vo, pp. 35. Cortlandville, 1841. *Vide* p. 190.
4. Elements of Materia Medica and Pharmacy. By O'Brien Bellingham, M.D., &c. &c. Edited by Arthur Mitchell, M.D. Part I. 8vo, pp. 302. Dublin, 1841.
5. Acaramachia, Vulgo Certamen Medicum de Acaro. Par J. Ed. Feldmann. 8vo, pp. 38. Londini, 1841.
6. Femoris Amputatis ex Acetabulo, Caroli Dauntonis Markensis, A. D. 1738-39. A Roberto Jeffery, ac Nepote suo, Josepho Jeffery, M.D. 8vo, pp. 15. 1841.
7. Deuxième Lettre sur la Dissolution des Calculs Urinaires, et leur Traitement Chimique. Par Leroy d'Etiolles, D.M., &c. 8vo, pp. 40. Paris, 1841.
8. Researches tending to prove the non-vascularity and the peculiar uniform mode of organization and nutrition of certain animal tissues, viz. articular cartilage, and the cartilage of the different classes of fibro-cartilage; the cornea, the crystalline lens, and the vitreous humour; and the epidermoid appendages. By Joseph Toynbee, Esq. (From the *Phil. Trans.* Part III. for 1841.) Plates. 4to, pp. 34. London, 1841.
9. The Retrospect of Practical Medicine and Surgery. Edited by W. Braithwaite, Esq. Vol. II. No. iv., July—December. 12mo, pp. 269. London, 1841.
10. Index Geologicus, designed, arranged, and published under the auspices of the Devon and Cornwall Nat. Hist. Society. By G. Bartlett, one of the vice-presidents. London, Van Voorst.

This is a beautiful chart, conveying an immense mass of varied information, in a tabular form.

OBITUARY.

On the 22d May 1841, of a protracted illness, Dr John Wagner of Charleston, South Carolina.

At Kurnaul, on the 20th October 1841, John Murray, M.D., Inspector-General of Hospitals.

At Paris, on the 21st November 1841, aged 62, M. Clément Desormes, Professor of Chemistry at the *Conservatoire des Arts et Métiers*. The chemical discoveries of M. Desormes are numerous and important. Among them may be mentioned the discovery, that the quantity of caloric is constant in a given weight of vapour, in all temperatures and under all pressures, if the space occupied by the vapour be saturated therewith; and also the important discovery of the constitution of the carburet of sulphur, denied by Berthollet, but ultimately satisfactorily confirmed by Thénard, Vauquelin, and Berzelius.

At Antigua, on the 16th November 1841, Robert Peddie, M.D., for some years a leading member of the Legislative Assembly of the island.

At Perth, on the 18th January 1812, James Hosack, M.D., son of Dr Hosack, physician there.

Lately, at Falmouth, on his way to Madeira, on his birth-day, in the 40th year of his age, John Calvert, M.D. &c.

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Amaurosis from Pressure on the Retina: the Symptoms, Causes, Pathology, Diagnosis, and Treatment of some of the Affections reducible under the foregoing Head.* By EDWARD OCTAVIUS HOCKEN, M.D., M.R.C.S.L., F.R.M.C.S., &c. &c.

THE imperfection or loss of vision which results from pressure on the retina, is not recognised as so common a variety of amaurosis as many of its other forms. It may be either temporary or permanent. It includes pressure on the convex and concave surfaces of the retina, either by sub-choroid or sub-sclerotic dropsy,—elongation and compression from orbital diseases,—by general hydrophthalmia, or by dropsy only of the vitreous humour,—from a depressed lens, aneurism, or simple enlargement of the ramus centralis retinæ, or of the other retinal vessels,—enlargement of the choroidal vessels,—the pressure of any foreign body,—by effusion of blood in or upon its surface,—and by the deposition of lymph.[1] I shall confine my present remarks to the complete elucidation of the subject of hydrophthalmia, viz., an in-

[1] *Vide* Author's "Treatise on Amaurosis, &c." p. 147, and Lancet, vol. ii., 1840-41, pp. 154, 157.

creased collection of fluids in the eye-ball, whatever their situation may be.

I will first touch on the symptoms, causes, pathology, and diagnosis of dropsy of the vitreous humour, and then prove my deductions by the narration of cases; premising that the term "general hydrophthalmia" is understood to include enlargement of the anterior chamber, and, consequently, dropsy of the aqueous humour. Such cases are comparatively rare. In simple dropsy of the vitreous humour, there is also general enlargement of the whole globe, preternatural convexity of the cornea, but with the addition of diminution of the chambers, and protrusion of the lens and iris forwards.

Dropsy of the vitreous humour.—The incipient symptoms are frequently obscure,—slight pain and dimness of vision, which, as the affection increases, changes to a myopic character, and characteristic phenomena develope themselves. The eye-ball becomes evidently enlarged, extremely hard and resisting, and altered in shape. From the *vis a tergo* the lens and the iris are pushed forwards, which may, even in the more advanced stages, come in contact with the internal surface of the cornea. The cornea becomes preternaturally convex, and finally opaque, from irritation and interrupted nutrition; the sclerotica is thinned from distension and separation of the fibres, and enlarged in proportion to its thinning; and from this process being most considerable in the inter-spaces of the recti muscles, the eye acquires a somewhat square form. The iris usually retains its healthy colour, whilst the pupil is dilated and motionless in proportion to the degree of distension present, and to the insensibility of the retina. As the sclerotica thins, so does the choroid become apparent; and as the thinning is always uniform, and affects the whole tunic equally and conjointly, so is the discoloration general and uniform. Thus the eye-ball acquires a bluer colour than natural, which gradually increases with the distension, until it attains an intense blue shade in the advanced stages of the complaint. The motions of the eye are limited, and finally performed with much difficulty; the hardness of the globe increasing in proportion to its distension, so as, when very severe, to endanger the continuity of the tunics. The eye is evidently enlarged from the commencement, and at length so much so, as scarcely to be contained in the orbit or covered by the lids.

The patient tells us, that at first his vision was defective, and he himself myopic; that this increased, till at length complete amaurosis was induced. The pain during the progress of the affection is deep-seated and tensive, situated in the eye and brow. During the early stages, the patient complains of a deep-seated feeling of pain and tension in the eye-ball; but as the vitreous humour increases in quantity, the pain and tension

become violent, and sometimes maddening. Occasionally, so severe is the pain, that Beer knew a man who punctured the globe with his pen-knife, "in the intensity of his agony."

Causes.—The disease has no connexion or relation whatever with general dropsy, but seems to originate in some local morbid action, induced in disordered or cachectic constitutions. I saw one case in a decidedly strumous child; and in another, which I shall presently dwell upon, it came on after a severe attack of influenza. The exciting causes are obscure, but seem to be such as usually induce a low insidious form of inflammation in the other textures of the eye.

Pathology.—The disease appears to be seated in the hyaloid membrane, which secretes an inordinate quantity of its contents. Is this morbid process, by which the vitreous humour is thus augmented, inflammatory? I incline to the opinion that it is, but most intractable in kind. And thus I may state, that chronic local hyperæmia would give the best definition which I entertain of its nature,—not but that there may be an active and acute inflammation of the tunica hyaloidea, speedily inducing hydrophthalmia. Mr Middlemore, who narrates such a case, supposes with Scarpa, that weakening of the sclerotica from blows and other causes, is usually connected with its pathology.

Diagnosis of hydrophthalmia generally.—This is by no means an unimportant part of the subject, since many cases of protrusion of the globe forwards from orbital disease, or from any *vis a tergo*, are by no means dissimilar in appearance, if the diagnostic points be not clearly known. All danger of deception may be entirely avoided, by attention to the following particulars:—1*st*, The appearance and conditions of the eyeball itself; 2*d*, The state and position of the lids and structures, intermediate between the orbital edges and tarsal cartilages; 3*d*, The presence or absence of a circumscribed tumour, displacing and fixing the globe. The first set of symptoms is by far the most important, as I shall endeavour to prove, in a diagnostic point of view, and essential to the presence of hydrophthalmia; for in all cases where any doubt can exist, we must look to the condition of the eye itself. Where hydrophthalmia has advanced sufficiently, so as to cause protrusion and enlargement of the globe, the sclerotica must be greatly thinned by absorption and separation of its component fibres, and, consequently, present a proportionately blue colour, and more or less alteration of its normal shape; this, I say, must be, and always is present. Again, in dropsy of the vitreous humour, the posterior chamber is abolished, and the iris thrust forwards; the anterior chamber is diminished, and the cornea preternaturally convex; the eye acquires a stony hardness. In general hydrophthalmia, the anterior and posterior chambers are likewise enlarged, and from the fact of an equality

of pressure both on the anterior and posterior surfaces of the iris, there is no displacement of that membrane. In exophthalmia,[1] the eye likewise is abnormally resisting, but never to a similar extent or degree. The textures are quite free from similar lesions, as in hydrophthalmia; the sclerotic is not thinned nor discoloured; whilst the anterior and posterior chambers are undisturbed. How important, then, are these differences. They are invariable, and therefore most truly diagnostic. I shall proceed, in the second place, to show that Dr O'Beirne's statements are, at all events, not always correct.

Second, *the state and position of the lids, and the structures intermediate between the orbital edges and the tarsal cartilages.*—Dr O'Beirne remarks, that "it is obvious that the following are the only certain means of distinguishiug real from apparent enlargement of the eyeball, viz.

"In hydrophthalmia, the eye is completely uncovered; in exophthalmia it is more covered than usual.

"In the former, the upper eyelid is pushed upwards, but unchanged in all other respects. In the latter, it hangs lower than usual, is more or less paralytic and puffed, and its surface is of a dusky red colour, and traversed by several enlarged veins."[2]

These statements of Dr O'Beirne, I believe to be most frequently correct; yet, nevertheless, as hydrophthalmia may and does co-exist with enlarged and tumefied lids, preternatural vascularity, and a partially paralytic condition, (probably from the weight being more than the levator palpebræ can constantly support,) as I shall proceed to show, they (taken singly) do not deserve much reliance as diagnostic symptoms, certainly not to the extent that Dr O'Beirne feels inclined to repose in them. I shall endeavour to prove that the condition of the structures intermediate between the tarsal cartilages and the edges of the orbit are of much greater importance.

Before narrating the case which will bear me out in these propositions, I may state, that in it and other similar instances, the tumified, vascular, and inflamed condition of the lids extended no higher than the tarsal cartilages,[3] and was evidently co-existent with, and dependent on, inflammation of the palpebral conjunctiva.

CASE 1. *Hydrophthalmia of both eyes in a cachectic constitution—œdema, and inflammatory congestion of the lids, as high as the reflection of the palpebral conjunctiva—transparent elevation of the con-*

[1] Not the results of accidental violence. In exophthalmia, the eye may be so inflamed as to obscure the subjacent textures.

[2] Dublin Medical Journal, vol. xviii., p. 97.

[3] This is not *absolutely* correct in *all* cases; the vascularity and swelling are gradually shaded off in that situation; they do not terminate abruptly.

junctiva around the cornea by sub-conjunctival fluid.—Mary Tree, aged 54, was admitted on the 5th of September 1840, with hydrophthalmia, affecting both globes. She was a tall, stout, leucophlegmatic individual, with great softness and want of tone in the textures generally, without any dropsical effusion elsewhere; her appearance and complaints plainly indicated a very unhealthy and cachectic condition of the constitution, the skin being pale and yellow, the tongue coated, the digestion disturbed, and the secretions and excretions inveterately foul. Her usual occupations and habits were regular, and not unhealthy.

The previous history she gave of the affection, was the following: that during the last epidemic prevalence of influenza (1837), she had suffered severely, and recovered finally with great prostration of strength, and a shattered constitution. During the convalescence she became affected with pains in the eyes, and dimness of vision,—the organs being red and intolerant of light, and that ever since that period her vision had failed gradually, attended with enlargement and protrusion of the eye-balls. She knew of no exciting cause which had preceded the symptoms. Do not these facts seem to confirm the view I took of its pathology, viz. its inflammatory nature, and the predisposition of a deranged constitution?

At the time of her application, the eye-balls were greatly enlarged, and protruded considerably from the orbits; the right eye in particular. Under ordinary circumstances they were but partially covered by the lids, *which were stretched over their upper circumferences, being in a tumid inflamed condition, as high as the reflection of the conjunctiva.* By a voluntary effort the lids could be raised for a short time, but, on its remission, occupied again their previous position, and by voluntary contraction of the orbiculares palpebrarum they could be completely closed, so as to cover the globes. The irides were thrust forwards, almost in contact with the neural surfaces of the corneæ; they were somewhat discoloured, nearly obliterating the anterior chambers, especially in the right eye, whilst the corneæ were abnormally convex, greatly diminished in size, opaque around their junction with the sclerotica, with two or three opaque spots on their surface; the sclerotica was *uniformly* distended and thinned, presenting a deep blue discoloration from the subjacent choroid appearing through it; being darkest at or around the ciliary ligament, whilst the eye-balls were mis-shapen and restrained in their motions. The conjunctivæ were extremely vascular and thickened —that lining the lids especially so—and elevated around the cornea by a transparent collection of fluid, confined by a perfectly transparent portion of conjunctiva. Epiphora existed, and on a superficial examination the eyes seemed to swim in water; but

this was found to result, on a careful inspection, chiefly from the transparent sub-conjunctival effusion.

The patient complained of nearly complete loss of vision, and deep-seated pain and tension in the globes. There was pain in the head and bones, and, as I have previously stated, great disturbance of the general health, denoted by a cachectic look, a feeble full pulse, and derangement of the secretions and excretions.

The *dignosis* was founded on the "appearances and condition of the globes," which I have stated as most diagnostic, and never deceptive, whilst the condition of the lids was exactly the reverse to what Dr O'Beirne has laid down as a law in cases of hydrophthalmia.

The treatment adopted in this instance was counter-irritation, and the strictest attention to the general health; a blister was opened at the back of the neck, mercurials administered in alterative doses, and stomachic aperients directed according to circumstances.

She applied again on the 21st, with little or no alteration in her symptoms; but during the few months which have intervened her health has somewhat improved, and she professes to have received some slight benefit (spring of 1841.)

Remarks.—In this case the disease *occupied both eyes*, which, judging from the aggregate of the cases I have witnessed, is most common, if not invariable; whilst, on the contrary, exophthalmia is almost *invariably confined to one.* The state of the eyelids depended, I presume, on the inflammation of the palpebral conjunctiva extending to the anterior textures; *but this condition of the lids exactly simulated what Dr O'Beirne states to be confined to cases of exophthalmia*, and although presenting evident marks characteristically differing from the congested lid of the latter affection, *especially in extent*, still none have been even alluded to in the paper to which I have referred; and, therefore, in similar cases to the one now detailed, the deductions are altogether inapplicable and incorrect.[1] I have already stated that these assertions of Dr O'Beirne are frequently in the main correct, but they are so only in cases free from conjunctival complications affecting the lids.

All the symptoms indicating true enlargement of the globes were present, as well as such derived from the *vis a tergo.* The

[1] By examination, we find, that the eye-balls of individuals of the same period of life are nearly of the same real or actual size, although, during life, their apparent magnitude varies much; hence, it will be obvious, that the apparent size is dependent on the situation of the eye-balls in the orbit, and the extent to which the organs are uncovered by the lids,—the more superficially placed, and the more uncovered the larger they appear, and of course *vice versa.*

condition of the conjunctiva immediately surrounding the cornea was very peculiar, and so transparent as to allow the deep-blue bulging of the ciliary ligament to be distinctly seen; this chemosis (?) and the inflammation of the lids and conjunctiva, showed a greater amount of disease than usually attends the progress of hydrophthalmia. I shall reserve my observations on treatment to a subsequent part, when I can speak connectedly on the subject, although our prognosis is always most unfavourable in confirmed cases.

I may now say a word or two on the latter division of this second part,—the condition of the structures intermediate between the orbital edges and the tarsal cartilages. *In hydrophthalmia these are free from disease; in exophthalmia tumid, œdematous, discoloured, and preternaturally vascular.*

Case 2.—*Congenital exophthalmia—strabismus convergens of the right eye—swelling, congestion, and partial paralysis of the upper lid, &c.*—Whilst writing these observations, I saw a child, with my friend Mr Coward of Hoxton, in whom this was clearly marked. A little boy of five years of age, had been affected with exophthalmia from birth; the father stated that the eye (right) was higher and "larger,"[1] than the fellow-organ at birth. The protrusion of the right eye had gradually increased, more so within the last two years, but had never been attended with any pain. The symptoms, on examination, were great protrusion of the organ, strabismus convergens, and dilation of the pupil; the upper eyelid was greatly swollen, covered with large tortuous livid vessels, and hung in front of the eye, covering it to a considerable extent; the conjunctiva generally, but especially of the lids, was inflamed and vascular, and protruded forwards on the lower and outer side, so as to be seen even without depressing the lower lid. The most particular point, however, was, *that the structures, as high as the orbital edge superiorly, were, as well as the lids, swollen, congested, and marked by varicose vessels.* When I speak of the vascularity reaching only to the upper edges of the tarsal cartilages, in hydrophthalmia, (see former case,) I do not mean, as I have already explained, that it terminates there abruptly, but only that it does not extend much higher, being gradually shaded off in that situation.

The patient was affected with true strabismus, not luscitas, (or immoveable distortion,) as when directed he could turn the eye outwards completely, and the external circumscribed swelling presented, on examination, no feeling of a defined tumour, but only a soft puffy swelling. The eye itself was unnaturally tense and resisting, not nearly so much as in hydrophthalmia, resulting, as I have before explained, from the same force which protrudes

[1] *Vide* Lancet, vol. ii. 1840–1, p. 146.

the globe; in appearance, there was nothing unnatural; the sclerotica was sound, and of a healthy colour; the iris not forced forwards; the cornea of its natural convexity, size, and transparency; the chambers normal; the pupil dilated and sluggish in its movements.

The child complained of no pain in the eye or head; its vision was defective, but by no means lost; and its health had been pretty good since birth. The strabismus probably resulted, not from pressure, but from the defect of vision interfering with the accurate use of the other eye. This case requires no comment; in it were seen all the symptoms peculiar to exophthalmia, characteristically proving the truth of my observations, and, in themselves, clearly diagnostic from those of hydrophthalmia.

My third and last division of the subject of diagnosis, treats of *the presence of a circumscribed tumour displacing and fixing the globe*. It behoves us, in every doubtful case, to examine the nature of the swelling, and ascertain its uniformity, since the majority of cases, attended with exophthalmic protrusion, are occasioned by a circumscribed tumour, or a tumour larger at one than another part. When such is evident to the eye of the observer, there can be no doubt about the matter; but in the early stages of the affection, we may be unable to discover its existence by the eye alone, although present, and forcing the eye-ball in the opposite direction. This may be accounted for by the comparatively small size of the swelling, and the fact of its being involved in the surrounding tumefaction. But the touch may here make manifest what the sight, without its assistance, either proved inefficient to discover, or suggested doubts to the mind of the observer; the part at which the protruding growth will ultimately show itself, feels, by careful manipulation, elevated and resisting, —it conveys the idea of some hard circumscribed growth imbedded in the surrounding soft textures. This is precisely the exact state of parts, and is therefore truly diagnostic.

Such a tumour displaces the globe in the opposite direction; thus, in the case just narrated, the tumour existed at the lower and outer part of the orbit, whilst the globe was ordinarily turned upwards and inwards, not, however, fixedly so in the patient; indeed, as I have before remarked, it was doubtful whether it resulted from pressure or from the defect of vision. When very slight, the protruded eye-ball would be turned out of its axis, but inconsiderably, and its motions limited to but a slight degree; yet this proposition would always hold good, namely, that the protrusion would be most considerable in *the opposite direction* to the situation of the expelling force; and hence, that the presence of a circumscribed tumour, discoverable by the united powers of touch and vision, displacing and comparatively fixing the eye-ball, may with advantage be enumerated

among the diagnostic symptoms of hydrophthalmia and exophthalmia.

I will now examine the evidence we possess of hydrophthalmia being an inflammatory disease; and first, its occasional appearance from acute inflammation.

Acute hyaloiditis—paracentisis oculi—atrophy of the organ.—A gentleman[1] complained of great pain in the globe, with a sense of tension, and great dimness of vision, occurring, as he stated, without any cause with which he was acquainted. On examining the eye, the iris was found to be somewhat convex, the pupil slightly dilated, and sluggish in its motions, and it had also a very dull and cloudy appearance; the globe of the eye was exceedingly firm and hard. Acute inflammation of the hyaloid membrane was suspected, and therefore bleeding, the use of mercury, and the application of blisters to the nape of the neck, was forthwith suggested and employed, but without any apparently beneficial result; for the eye-ball increased in firmness, and became evidently enlarged; the pupil became contracted and immoveable, the iris was almost in contact with the cornea, the lens was becoming opaque, and vision was nearly destroyed. The pain in the eye, the orbit, and the head, were almost insupportable. The eye was then tapped with a fine grooved needle, leeches were applied to the temples, and mercurial ointment, blended with opium, was rubbed over and around the situation of the supra-orbitary nerve. After repeated tapping of the eye, the disease terminated in collapse of the eye-ball; and it is extremely probable, from the state of the patient's vision, that the retina was first compressed, and then absorbed, together with the hyaloid membrane and its septa. At all events, where great dimness of vision occurs in connection with an increase of the vitreous fluid, and independently of any proper and sufficient indication of inflammation, either of the choroid or of the retina, there is satisfactory evidence that such dimness of vision arises chiefly from compression of the retina; and if it continue on the removal of the compressing cause, there is very good reason to believe that the compression it has already sustained, has either induced an immediate state of atony, or has caused its partial or total absorption.

Let me now speak from my own experience of chronic hyaloiditis, and its diagnosis. I will presently narrate a case of well-marked hydrophthalmia from chronic hyaloiditis, which will, I trust, at all events prove that the pathology or nature of the affection is occasionally an inflammation of that tunic, leading to an increased secretion of its normal contents. But I would inquire, must we always call disorganizing processes, attended with

[1] *Vide* Middlemore's Treatise, vol. ii. p. 327.

an increased fullness of the vessels of the part, inflammation? If so, then is dropsy of the vitreous humour, always an inflammatory condition of the hyaloid membrane; but if we answer the question in the negative, then may we regard the disease to consist usually of an insidious, chronic, intractable, and disorganizing process, specifically marked by increased secretion. We do most truly see such processes at work under various circumstances, as I have now alluded to, and yet without the shadow of a title to the epithet inflammatory. The processes which spontaneously occur in advanced or old age, give rise to changes in colour, transparency, texture, and size. As instances, I may enumerate the enlargement, &c. of the prostate, the opacity and change of structure in the ciliary circumference of the cornea, constituting arcus senilis, the haziness or changes which so frequently originate, at this time of life, in the lens and humours, the retina, and pigmentum nigrum, from the same causes,—are not inflammatory. Again, at any period of existence, tumours originate in various parts of the body,—parts undergo various transformations, and still are not of an inflammatory origin; so that mere change of structure, size, and situation, is not *necessarily* connected with inflammation.

The following case probably implicated the retina, which may have assisted in the production of the amaurosis, conjointly with pressure on its concave surface.

CASE 4.[1] *Enlargement and blue discoloration of the right globe —inflammatory halo around the cornea—atrophy, with a shining, shrunken, capsular cataract of the left organ.*—Elizabeth Ward, 21 years of age, a full, florid, unhealthy-looking person, is rather stout, with a thick, short neck, and small thick features. She has been subject to frequent attacks of giddiness, and is extremely nervous and excitable. The left eye was lost during childhood from a blow: it presented, during her present condition, a shining, shrunken, corrugated, capsular cataract,—the *cataracta arida siliquosa* of German authors; the eye-ball was sunk in the orbit, and considerably atrophied.

Preceding and incipient symptoms.—She states that she was always near-sighted, (at least as long as she could remember,) but could see perfectly when objects were placed sufficiently near. Her present symptoms came on suddenly, in the November of the year 1839, whilst actively engaged in digging potatoes. She suddenly found her sight to become dim and indistinct whilst thus employed; her sight became affected without any other well-marked symptom, and has continued to deteriorate gradually from that to the present time, (May 1840.) The augmentation of the amaurotic symptoms has been occasionally attended with

[1] *Vide* Author's Paper, Lancet, p. 223, vol. ii. 1840-41.

sensations of muscæ, sparks, &c., deep-seated pain in the eyeball, and occasional pain in the ear, frequent headache, vertigo, and pain over the brow.

Present symptoms.—She states that her sight is very imperfect and confused, but less so during the morning; that on first entering a brightly lighted apartment, her sight is somewhat improved, but that as the light is painful to her, she sees best, for any continuance, in a comparatively darkened apartment. She has almost constantly unpleasant sensations of dark or luminous bodies flitting before the eye; sometimes a thick mist seems to intervene between herself and surrounding objects; her head and brow pain her, especially the former, from excitement; her general health is otherwise good, but she professes herself to be "weak and nervous."

The aspect is not vacant, and the axes of the eyeballs correspond; but the pupil (right) is dilated, and its motions slow and limited, whilst the iris is protruded forwards, with diminution of the chambers; the eyeball is preternaturally protuberant and exposed—much firmer and harder than natural; the lids healthy, but forced asunder by the globe; the sclerotica *uniformly thinned*, and of a deep blue colour, from the appearance of the subjacent choroid; anterior ciliary vessels formed a slight, but well-marked zonular halo around the circumference of the cornea, and a few dilated conjunctival vessels passed inwards from the recti branches. Her pulse was excitable and quick, but readily compressible; the appetite and digestion good, the bowels open, and the catamenial flux normal in quantity and regular in appearance. When first treated, in November 1839, she states, that the general dullness of sight yielded to hemiopia[1] on the right side of the affected organ, by the application of leeches; but that hemiopic condition of vision lasted only ten days or a fortnight, when the original derangement of vision returned.

Diagnosis.—The diagnosis founded on the symptoms of pressure in, and enlargement of the globe, protrusion of the iris forwards, and diminution of the chambers, and the absence of obvious displacement of the retina, was, dropsy of the vitreous humour from chronic hyaloiditis; amaurosis from pressure on the concave surface of the retina; complication of the retina in the inflammatory process.

The *treatment* employed consisted chiefly in local blood-letting, by cupping at the back of the neck, the colocynth and tartarised antimony pill, in the proportion of one-twelfth of a grain of the

[1] This, I think, incontestibly proves, that the blindness was not occasioned primarily by pressure from dropsy of the vitreous humour; its sudden occurrence, also, whilst using exertion in the bent position, looks more like amaurosis from congestion.

latter to five grains of the former—v. grs. quâque nocte—vel p. r. n., &c. &c.

Not the slightest improvement resulted from these measures, and the patient was discharged at her own request, after some months' residence as an in-patient of the West of England Eye Infirmary.

Remarks.—The inflammatory nature of the affection was diagnosticated, from the small, straight zone of vessels, which surrounded, but fell short of the cornea, the false appearances of light, and the pain over the brow, whilst the seat of the inflammation was inferred from the certainty that dropsy of the vitreous humour existed, and the usual phenomena of retinal complication. Again, we have a striking instance of the diagnostic symptoms exemplified; the uniformity of the sclerotic attenuation, yielding chiefly in the recti interspaces, and the complete failure of common methods of treatment. The advantage of a comparative examination into the degree of resistance offered by the *two* globes to the examining fingers, was lost in this case, since the left eye had been atrophied from childhood; but this was of little importance, as I have already explained, as an accurate estimate may be formed simply from a practical knowledge of the hardness of the healthy globe, this being nearly alike in all adult eyeballs. A few dilated vessels ramified in the conjunctiva oculi, but that reflected on the lids, was free from complication; hence the eyeball was preternaturally exposed, and the upper eyelid uncongested. In such cases it is that Dr O'Beirne's observations have any value.

As regards the effects produced by the application of leeches, we can only imagine that cerebral congestion was primarily induced by the exertion and position whilst at work, in a probably predisposed individual, and that the means employed partially relieved this condition, whilst the congestion of the vessels of the eyeball continued, and ultimately led to the subsequent effects. I shall not here digress on any theories relating to the production of hemiopic vision, such as Wollaston's opinion of the decussation and ultimate distribution of the optic nerves, &c., but simply remark, that it here existed on the right side,[1] the left half of objects only being seen, its short continuance, and the return of complete dullness. Was this return the consequence of the commencement of the subsequent inflammatory process? During the patient's residence in the West of England Eye Infirmary, scarcely any fever could be said to exist; in fact, the general health was but little deranged; she was, however, decidedly hysterical.

[1] Mr Abernethy ludicrously related the account of an attack of hemiopia which he had himself suffered from, by saying, that in his own name he could see as far as the "*ne*," but not a bit of the "*thy*."

I will proceed to consider general hydrophthalmia, after I have spoken somewhat of diagnosis.

Mr Dalrymple has offered some remarks on the foregoing case, which, as coming from a gentleman alike distinguished for his scientific and practical acumen, it becomes me to notice. In a letter to the *Lancet*[1] he remarks, that "the infrequency of death from, or during ophthalmic disease, and the great difficulty of obtaining a deliberate examination of the organs of vision under any circumstances, have been the obvious causes of the incompleteness of the morbid anatomy of the human eye. Hence the assumption of peculiar conditions of the organ, when the subject of affections of the posterior and more hidden tissues; and hence the localizing the seats of inflammation, which are neither proved by post-mortem results, nor by symptoms and appearances observed during life. These remarks are hazarded in consequence of reading in your last number a case of so-called hyaloiditis, by Dr Hocken.

"I by no means wish to deny that such a disease may not exist; on the contrary, any tissue organized as the hyaloid membrane indubitably is, may be the subject of inflammatory action. I beg, therefore, simply to observe, that I do not see any symptom or detailed appearance in the case of Elizabeth Ward, that warrants the assumption of hyaloiditis.

"The case appears, from its early history, as the author justly observes, to be one of congestive amaurosis, probably congestion of both choroid and retina, subsequently proceeding to chronic inflammation of those tissues. The dark and luminous spectra attest this fact. The eyeball enlarges, the iris is projected forwards, and the patient becomes perfectly amaurotic. This is the result of pressure undeniably. The hardness of the globe, the blueness of the sclerotic, sufficiently indicate the increased volume of fluids within the eye. Where, however, is there any thing to affirm the supposition of the pressure being on the concave surface of the retina, or, in other words, of an increased quantity of the fluid filling the hyaloid cells? In all matters professedly incapable of demonstration, it behoves us to be cautious how we assume the existence of morbid changes, which are, to say the least, excessively rare, and especially in a case like the present, where no evidence appears to support the presumption.

"It may be asked, why in this case the pressure may not have existed on the *convex* side of the retina, from an exudation of fluid between the choroid and retina. I have, by a fortunate chance, in my possession two preparations, which indicate the morbid change to a very marked extent, in which the earlier ob-

[1] P. 270, vol. ii. 1840-41.

jective and subjective phenomena accord with those detailed in the case of Elizabeth Ward.

"In the one, the subject, a child, died of acute hydrocephalus, the ophthalmic disease, however, long preceding the cerebral mischief. The child became gradually amaurotic of one eye; the globe enlarged, was hard and resisting; the iris was pressed forwards nearly in contact with the cornea; the pupil was dilated; the same halo of sclerotic vessels surrounded the cornea; the same frontal pains and vertigo were present. The admission-paper of the patient was at once marked chronic choroiditis. These symptoms were soon merged in the acute cerebral disease of which the child died.

"On examination it was found, as regards the eye, that a considerable effusion of fluid existed between the choroid and retina, to such an extent, as not only to enlarge the globe and press forward the iris, but *to compress the retina into an almost solid cord in the centre of the eye*,[1] and cause *a total absorption of the vitreous body*, or, at least, of its fluids. The lens had *ultimately* become opaque, and was thrust forward in contact with and carried onwards the iris, to the total obliteration of the anterior chamber. The morbid fluid was collected in a watch-glass, and coagulated by heat into a solid mass of albumen.

"In this case, the amaurosis combined with a hard and distended globe was the result of effusion, but, at the same time, a total obliteration of the natural fluids, the vitreous and aqueous, was demonstrated by the post-mortem examination.

"The second case, the preparation of which I also possess, occurred in the practice of Mr Tyrrell, and has been alluded to in that gentleman's excellent work on diseases of the eye, (vol. ii. p. 71.) In this case the vitreous fluids had considerably wasted; the retina was compressed and puckered up from effusion between it and the choroid; but in the progress of the disease, although the globe had been enlarged, as indicated by the preparation, absorption of the contained fluids had preceded the patient's death; and the globe, from a firm and resisting one, had become flaccid.

"I am much more inclined, therefore, to look upon the case of Elizabeth Ward as one of chronic choroiditis, than as inflammation of the hyaloid membrane, more especially as the early symptoms all tend to that conclusion. The mere distension of the globe is not pathognomonic, and may depend on more causes than increased vitreous body; while the *succession* of symptoms—an important matter in all obscure diseases—lead naturally to the inference, that congestion of the choroid merged into chronic in-

[1] I have taken the liberty of placing this passage in italics, as it seems to me of as much importance as the following clause.

flammation of that tissue, and ultimate effusion between it and the retina.

"I hope that so diligent and acute an ophthalmic observer, as Dr Hocken has shown himself in his papers upon amaurosis, will not lose sight of this interesting case; and should chance throw in his way the opportunity of investigating the morbid structures of this eye, that he will favour the readers of your Journal with details that cannot fail to be interesting in the present imperfect condition of ophthalmic morbid anatomy."[1]

The observations of Mr Dalrymple are doubtless valuable, yet so far interested that he has a theory to support, (at least I presume so) namely, the collection of fluid in Jacob's membrane, which, according to this gentleman, is a closed serous sac. As regards myself, I seek but the establishment of truth; I have no theory to support, and of course it would make no difference to me whether the fluid were collected anterior or posterior to the retina; but as I cannot exactly accord with Mr Dalrymple's views, I will proceed to show how, and in what manner, a diagnosis may be formed in the living eye, between enlargement of the vitreous body, and chronic choroiditis, leading to an increased secretion of fluid behind the retina.

With Mr Dalrymple I am ready to acknowledge,[2] that the unfrequency of opportunities in making post-mortem examinations of the apparatus of vision, has hitherto retarded, and at the present time still continues to retard, a certain and definite knowledge of the pathology of the deeper-seated tissues; but I would maintain that careful and *accurate* observation during life is most frequently sufficient.

True, in hydrophthalmia from any cause, and from any situation, the accumulated fluid may occupy, the dilatation of the eyeball is effected, from the uniform pressure and distension such must exert, according to the known laws of accumulated fluids, (exerting an equal degree of pressure in every direction) whether the accumulation be blood, or pus, or serum; yet we must remember that diseased actions, originating the secretion or effusion, may materially alter this general law; for instance, whatever occasions a varicose condition of the choroidal vessels, although it may likewise produce an accumulation of fluid, prevents the *uniformity* of distension, and in place occasions *irregularity or hernial distension, and attenuation of the sclerotica*, in accordance with the irregular distension and uneven surface of the subjacent choroid. This very condition of the choroid is soon

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[1] In the summer of 1841 I made diligent search after this patient, but was unable to ascertain any further particulars of her history.

[2] *Vide* Lancet, vol. ii. p. 318, 1841-42.

produced, either in acute or chronic choroiditis; and hence a valuable diagnostic point.

The diagnosis of an increase in the quantity of the vitreous humour, whether it does or does not own that local pathology, I have stated, from that accumulation of fluid effected by choroiditis, may be found in my third communication on amaurosis, in the second volume of *The Lancet* for 1840–41.[1] I there stated, that in dropsy of the vitreous humour, the sclerotica was dilated and thinned *smoothly and uniformly;* but that in choroiditis the *uniformity* was absent, the thinning being irregular; and hence the protrusion, first of the ciliary ligament, and then of portions of the choroid itself, constituting herniæ scleroticæ.

Another point to be borne in mind is, that ordinary hydrophthalmia is a disease of *both eyes*, (acute hyaloiditis may be confined to one,) choroiditis of *one*—disease not commencing in the fellow-globe, until it has progressed considerably in the one primarily affected. When such extension results, it follows the laws of *analogy* I have already laid down *(loc. cit.* p. 153—4) namely, that exactly the same diseased actions are set up, and the identical parts of the fellow-organ are deranged—whatever be the disease, or whatever parts may be the seat of such affections.

I have never myself found much difficulty in the diagnosis between an increased quantity of the vitreous humour, and collections of fluid behind the retina, when sufficiently far advanced to form any definite opinion at all. As Mr Dalrymple justly remarks, the retina is in such cases thrust forwards, producing a corresponding absorption of the vitreous humour in proportion to its advance, the retina eventually forming an almost solid cord in the centre of the eye. The very advance of the retina in these cases, is a proof of their nature. I recollect watching a case, in which this fact was beautifully and evidently seen, during some two or three weeks. The retina, rendered white and opaque, was gradually and visibly thrust forwards, approaching from the fundus and sides towards the pupil, increasing proportionally with the accumulation. At the termination of this time it began to diminish gradually, going on till the whole globe was rendered flaccid and shrunken, remaining partially atrophic; the patient retained imperfect vision of the organ. These *obvious* phenomena are not uncommon, nor exceptions to some general rule. I believe that they are invariable and diagnostic, sometimes proceeding to a very considerable length, as may be gathered from Mr Wardrop's remarks.

Mr Wardrop says,[2] that where the fluid collects quickly, it is accompanied by severe pain in the eye and head; the pupil becomes much dilated, and when the disease has far advanced,

[1] *Vide loc. cit.*, p. 156. [2] Morbid Anatomy of the Human Eye, vol. ii. p. 72.

there is the appearance of an opaque body behind the lens, from the retina being compressed, which in one instance was mistaken for cataract, and an attempt made to couch it. This gentleman gives an illustration of this case. (Plate xvii. p. 289.) It is a vertical section of an eye, "where a watery fluid had collected between the choroid coat and retina, in such quantity as to compress the retina into a cord, and produce a complete absorption of the vitreous humour." He remarks that the eye in this instance appeared, on a superficial examination, to be affected with cataract, *a white substance being seen behind the pupil.* An attempt to couch what was conceived to be the opaque lens was made—a fruitless operation, which gave great pain.

What could have prevented a careful observer from detecting so important and obvious an objective symptom in Mr Dalrymple's case? where he states that the retina was compressed into an almost solid cord in the centre of the eye, and the vitreous humour totally absorbed—cataract not being developed until a very advanced stage, or, as Mr D. has expressed himself, "ultimately."

Hence I would remark, as a general law, applicable to all cases, that no important quantity of fluid could collect behind the retina, without displacing that tunic, and causing more or less displacement and absorption of the vitreous body; and that in all such cases the nature must be self-evident by a careful inspection through the pupil, where the *white advancing retina* may be recognised at the fundus and sides, since the same causes which displace, invariably render the retina opaque and white.

General Hydrophthalmia.—This is an affection in which the vitreous and aqueous humours are both morbidly increased. The pressure from behind is counterbalanced by the force exerted anteriorly; and hence the iris retains its normal relative situation from the *equality of pressure* exerted on all sides. To the symptoms of dropsy of the vitreous humour, are superadded those of enlargement of the anterior chamber. The cornea is thus rendered preternaturally large and convex, and in general with a tendency to central thinning and protrusion,[1] occasioning, in addition to the very imperfect vision, *visus obliquus*, when the patient attempts to view anything. I have remarked that nearly all of the few cases of this disease I have witnessed, were cases of dropsy of the vitreous humour, superadded to an original condition of myopia, with a large anterior chamber, and preternatural convexity of the cornea, this latter increasing in connexion with the superadded disease. General hydrophthalmia is a very rare

[1] I presume Scarpa alludes to this tendency when he says "that the eyeball assumes at first an oval figure, terminating in a point at the cornea." Translation by Briggs, p. 421, second edition.

disease; so much so, that I do not remember more than two or three cases of this affection, out of the many thousand ophthalmic cases I have examined during the last seven or eight years. One of these I will now narrate. *General hydrophthalmia of both globes, more advanced in the right than the left organ—great imperfection of vision in both eyes—tendency to central thinning, and central protrusion of the cornea, occasioning marked visus obliquus.*

A respectable-looking woman, named Dorothea Baker, applied to my friend Mr Wormald, among the out-patients at St Bartholomew's hospital, complaining of great dimness of vision affecting both globes, on the 2d of December 1841. She was a pale cachectic-looking female of middle age (aged 50); her countenance sallow and anæmic, but the lips and lining of the mouth florid and natural. She stated, that she had been for a long time under treatment elsewhere, but had not had many active remedies employed, although her mouth had been made sore by mercury. She is a servant; and in the capacity of cook, has been employed for several years before large fires; but has, on her own account, worked at her needle as much as her other occupations would permit. About two years ago she felt herself unwell, but imagined that she had taken cold; and during this period it was that she first found her sight defective, and complained of aching and weariness in the globes, after she had been working some time with her needle. She states, that several years before this she had been in the habit of perceiving a sense of waving before her eyes, frequently with, but occasionally without, luminous spectra or dark muscæ volitantes, especially from derangement of her health, digestion, &c. Her vision has always, as far as she can remember, been myopic in both organs, and the vision of the left much more imperfect and obscure than that of the right.

From the period alluded to (about two years ago), she has found the vision of both eyes become gradually more and more imperfect, chiefly, however, in the right eye; luminous bodies and a waving appearance were very troublesome at first, but they have at present ceased for a long time: she has always experienced more or less pain in the globes, which was deep-seated, and most severe in the right eye, coming on with greatest severity, and with a dull oppressive weight and aching over the brow towards night. This pain has gradually changed its character during the continuance of the affection, having become more constant in its presence, and much more tensive in its character. She describes it as very deep-seated—"at the bottom of the eye-ball," being a dull heavy pain, as of pressure, invariably increased nocturnally in connection with the derangements of sensation over the brows. She has been under treatment for some time, and has had her gums made sore by the employment of mercury, but has not been either bled or blistered.

On making an examination, on the day of her application, the unnatural prominence of the eye-balls, especially of the right organ, was most obvious at first sight. On closer inspection, we found evidences of enlargement in the globes: the anterior chambers were enlarged, and the corneæ much more prominent than natural, with central thinning, and tendency to conical cornea, much farther advanced, however, in the right eye; fundus of the right eye (which also applies to the left, with the fact, that all the phenomena were more marked, and farther advanced in the right) somewhat heavy; the eye-ball of a *uniform* bluish colour; cornea clear and transparent, but large and slightly conical; iris healthy in its appearance, both as regards brilliancy, colour, and relative situation, although, from the increased size of the anterior chamber, it was unusually distant from the inner surface of the cornea. A slight but indistinct zone of very minute straight vessels surrounded the cornea, and the eyelids were preternaturally loaded with blood, and large ramifying vessels. The organ was firm to the touch, and resisted compression with abnormal hardness. The pupils were dilated slightly above the medium size, and responded to the sudden alternation of light and shade, but imperfectly and sluggishly. The aspect of the patient, at a distance, was staring and amaurotic.

She complained of very indistinct vision with either eye, so that when a white dialed watch, with black figures, of large size, was shown her, she could with difficulty make out the situation of the minute and hour hands, but could not even perceive that a second hand or figures existed at all. She held the object close to the eye, and obliquely,—this being the only position in which she could see at all. The pain in the globes and over the brows was regularly present, and presented the peculiarities already described; and the sense of distension and pressure in the right eye was very annoying. The waving appearance had disappeared for some time.

Her general health was deranged: the tongue moist, and covered with a slimy yellowish fur; look cachectic; alimentary secretions foul; pulse soft and full. She was directed on the 2d of December—Ferri sesquioxydi xv grs. hyd. c cretâ iij. grs. ter die. Mr Wormald directed the foregoing remedies from the pallor and cachectic look of the patient, and on a theory that a complete change of treatment frequently cures, after the individual has pur sued an antiphlogistic, or other plan of treatment, for any length of time. *December* 6. Remains *statu quo* in all essentials. To continue. *December* 13. Her general health is improved; the opthalmic symptoms have not deteriorated. Pergat. *December* 20. A decided improvement in her appearance; vision nearly as before. To continue. *December* 27. States herself to remain as before; complains much of *visus obliquus*, chiefly with the

right eye; corneæ have a decided tendency to become conical. She imagines that the "protrusion" of the eyeballs continues to increase, but that her vision is not worse at present than it has been for some time. To continue.

Mr Wormald intends to administer turpentine, in small doses, by my recommendation, the effects of which I trust to watch carefully, although little prospect of good is held out by any treatment, general or local.

Remarks.—The diagnosis of general hydrophthalmia was made, in this case, from the obvious phenomena of general enlargement of the eye-ball which were present: considerable enlargement of the cavity containing the aqueous humour being superadded to those symptoms on which I have already dwelt in relation to dropsy of the vitreous humour. As we should have judged *a priori*, the equality of pressure prevented any displacement of the iris or lens,—the resistance of the increased volume of aqueous fluid pent up in a closed cavity (as it is termed), sufficing to counterbalance the distension and pressure originating in the *vis a tergo;* under these circumstances, the only relief to the constantly existing and distending power would be obtained in the augmented size of the eye-ball generally, by the yielding of the several tissues forming its parietes. An inflammatory halo surrounded the cornea; and there were many other definite symptoms of inflammation present, with considerable derangement of the general health,—a derangement which had commenced two years previously in a febrile attack, which the patient herself deemed to be the symptoms of "cold:" these facts accord with my previous observations. I need hardly repeat, that the simultaneous occurrence of the same affection in *both eyes*, although with a different degree of severity and rapidity, the *smooth and uniform* distension and thinning of the sclerotica in an advanced period of the disease, unattended by any advance of the retina, rendered *white and opaque* by disturbing causes, determined clearly in my mind, that the derangement was not choroiditis, and that the pressure existed anterior to, and operated on the concave surface of the retina, and not posterior to, and on its convex surface:—hence my diagnosis. The patient stated, that she had always been near-sighted, doubtless owing to a congenital convexity of the cornea, and the large size of the anterior chamber, the dropsy of the vitreous humour being superadded to, and increasing in connection with, an increase of the natural condition. The affection of the aqueous chamber, which came on with the disease of the vitreous humour, seemed to approach in character the ordinary process of conical cornea, the increased secretion, and effects of accumulation being conjoined with the tendency to central thinning and protrusion.

Cases of dropsy of both the aqueous and vitreous humour together, in the same patient, are, I am persuaded, very rare occur-

rences; the case I have just detailed, is one out of two that I have myself witnessed. Authors, however, speak of the affection as it were common; and although I cannot with Mr Middlemore say, I have never seen a case of general hydrophthalmia, still I believe, with that gentleman, that they are extremely uncommon. In conclusion of the foregoing remarks, allow me to say a few words on treatment.

Treatment.—The rational treatment of any disease must be based on the three following points: First, a correct diagnosis of the disease itself; second, of its intimate pathology; and, third, an experimental knowledge of the action of particular remedies;[1] the whole being modified and adapted to individual cases. As I have before remarked, the ordinary treatment almost invariably fails to produce beneficial results, and ultimate recourse is had to paracentesis oculi, with repetition of the operation as often as the reaccumulation induces severe or urgent symptoms. Beer has even gone so far as to propose a section of the cornea as for the extraction of cataract, and through it to evacuate the lens, and the whole or chief part of the vitreous humours, so as to produce collapse and subsequent shrinking of the tunics, and, of course, perfect loss of the eye.

The plan I would recommend is the following:—If symptoms indicate the propriety of depletion, let a few leeches be applied to the temples at regular intervals, or a moderate cupping from the nuclea. At the same time, maintain an efficient extent of counter-irritation, by the seton or tartar-emetic ointment, at the back of the neck; regulate the functions of the bowels by suitable medicines; and let the general health be improved by every means in our power, which the particular example under treatment may allow. But what I would especially call attention to, is the remarkable influence which turpentine possesses over similar disorganising processes. I have too often witnessed its decided powers in very chronic changes to doubt its efficacy. Now, although I have, as yet, had no opportunity of fairly testing its effects in hydrophthalmia, yet, from analogy, I infer that it would be most likely to stop the progress of the affection, or induce reparative processes; at all events, it merits a careful trial. How important would it be to find a method of treatment capable of even suspending the symptoms and preventing their advance! Turpentine, in small and regular doses, holds out the best chance of accomplishing these ends, if not of procuring a perfect cure.

The dose should be small, and continued regularly,—half a drachm to a drachm, two or three times a-day, in almond emul-

[1] Treatment founded simply on the last of these three divisions, is empirical and most dangerous, in passing from isolated facts to general application, inasmuch as it regards symptoms only, without reference to their pathological causation.

sion, containing a small quantity of the sesqui-carbonate of soda in solution, and some agreeable syrup to cover its unpleasant taste. Mr Carmichael's observations on its employment in iritis are judicious : he gives an excellent formula for its administration. I have seen this plan of treatment especially useful in the more chronic forms of choroiditis; the natural appearance of the globes and healthy vision being restored by its continued and judicious employment. It succeeded in a patient in whom one eye was affected; and the symptoms suspended, with the occurrence of an exactly similar disease in the same tissues of the opposite organ,[1] again yielding to the careful administration of turpentine.

Scarpa[2] asserts that, as far as he has consulted the result of the observations of the best practitioners upon this subject, he has not met with a single history correctly detailed of a cure of the *dropsy* of the eye by means of internal remedies,—a statement which but too truly coincides with my own inquiries and observation. The same author mentions that the disease is sometimes preceded by blows upon the eye or temple, or by *an obstinate internal ophthalmia*, and that occasionally the iris "is in a singular manner tremulous on the slightest motion of the eyeball." If such is ever the case, it must depend on either the destruction of the hyaloid membrane and the fluid character of its contents, or the increased size of the posterior chamber. In connection with the opinions I have already expressed, the following may appear interesting:—He says, "in all the cases of dropsy of the eye which I have operated upon, or examined in the dead body, in different stages of the disease, I have constantly found the vitreous humour, accordingly as the disease was inveterate or recent, more or less disorganised, and in a state of dissolution."

Sub-choroid and sub-sclerotic dropsy.—I shall terminate this paper by a few remarks on these effusions. They may be situated either between the sclerotica and choroid, between the laminæ of the choroid, or between the choroid and retina. They invariably result from inflammatory action going on in the internal tunics of the eye, generally affecting the choroid coat chiefly. The severity of the pain and other symptoms depend entirely on the activity of the inflammation, and the rapidity with which the fluid collects. Unless they give rise to protrusion of the retina forwards, rendering it white and opaque, as it advances, it is difficult, nay impossible, to diagnose them in the living subject, inasmuch as the symptoms would not differ from mere uncomplicated inflammation of the internal tunics; but this is always effected whenever the quantity is at all considerable. Should the

[1] *Vide* Author's remarks on the analogy of sympathy, Lancet, vol. ii. 1840–41, pp. 153–4.

[2] Scarpa, by Briggs, p. 423, 2d edition.

sub-sclerotic dropsy be limited by adhesion, a partial yielding of the posterior portion of that tunic might result, occasioning a form of staphyloma sclerotica not to be discovered in the living subject. (*Vide* figs. 9 and 10 in Scarpa's second plate.) The advancing retina, in these diseases, somewhat resembles, and has been mistaken for fungus hæmatodes, being forced forwards in the form of a cone, its apex being at the optic nerve, whilst its base surrounds the edge of the crystalline lens.

These cases affect but one eye at the same time, and they are altogether different in their pathology from dropsy of the vitreous humour, which affects both, and is invariably, according to my own observations, dependent on constitutional causes, perfectly dissimilar from ordinary dropsy. They should be treated of in connection with the affections of which they are only occasional symptoms; and accordingly, I shall omit their further consideration for the present. Acute hyaloiditis is, of course, curable by active antiphlogistic treatment; and hence the rationale of Dr O'Beirne's case.

ARTICLE II.—*Case of Snake-Bite Successfully Treated. By* FR. SIEVWRIGHT, ESQ., *Surgeon, 9th Foot.* (*Communicated by Professor Sir George Ballingall.*)

CAMP, ALLEKOLUM, on the right bank of the Pooney River, 25th January 1837.

At 2 P.M., James Welsh, aged four years, only child of the mess-serjeant, 45th regiment, was wounded in the left foot by the bite of a poisonous snake, the cobra manille, about 3½ inches in length, (considered to be of a more deadly nature than that of the large-hooded snake, the cobra de capella,) whilst amusing himself, playing with some wild fowl:—the viper had been attached to one of the birds. The wound was on the inner side of the great toe, or rather between the first and second metatarsal bones; the child screamed, and the father, who was present, observing what had taken place, destroyed the snake, and, as I fortunately happened to be passing the tent at the moment, he called me in. I immediately applied a tight ligature round the leg, a little way above the ankle, then cut out the bitten part, when, from the appearances underneath, the fangs having penetrated to a considerable depth, I was induced to repeat the operation; from the situation of the bite, the cupping glass could not be affixed,—this was, however, remedied by a native servant, much attached to the child, who applied his mouth to the wound and sucked it; the bleeding surface was then washed with aqua ammonia; the breathing about this period became stertorous and difficult, shortly increasing to a painful degree;

pupils were slightly dilated; skin clammy and disagreeably cool, with languid, thready, and rapid pulse; there appeared but slender hopes for the little sufferer. Ten drops water of ammonia, diluted, was administered, this was repeated,—also wine given in small quantities. The foot having become much swollen and discoloured, partly no doubt from the tightness of the ligature, was relieved by free scarification with a lancet. The threatening symptoms abated in fifteen minutes; the child gradually recovered from the state of lethargy; warm cataplasms were applied to the foot; the parts healed kindly; and in the course of a short time he was as well as ever.

My friend Dr Hunter of the 12th Lancers, was then my assistant, and saw this interesting case.

ARTICLE III.—*On the Bite of one of the Lizard Tribe. By* D. C. BELL, Esq., *Superintending Surgeon, Bombay Establishment.* (*Communicated by Professor Sir George Ballingall.*)

(*Copy of Letters in Reply to a Circular of the Superintending Surgeon, North-West Division of Guzerat, on the Effects of the Bite of one of the Lizard Tribe, called by the natives "Chundun Goo,"*[1] *supposed to be a species of Monitor.*)

In January 1834, I was superintending some operations in boring for water, at the village of Roopaul, in the Dholka Pergunnah; and was one morning called to see a sepoy, who was attached to me as a guard, as they reported he was dead.

The person mentioned was of the Mahometan caste, aged about 45 years, of a weakly and rather debauched appearance, addicted to opium. He was sleeping on a cot in the open air, and under some nimb trees. The cots of four other sepoys were close to the one he slept on. The state I saw him in was discovered by one of the sepoys endeavouring to awake him, telling him it was time to get up. He was to all appearance quite dead, body cold, eyelids closed, but when opened, the eye appeared quite fixed, as in death, mouth slightly open, no pulse at the wrist, and scarcely any pulsation at the heart. Several charms had been tried to restore him to life, but without any effect, when a native Byragee (religious mendicant), who lived in the village, was sent for. On his examining the sepoy, he requested me to give him some pounded red and black pepper; on getting which he had the man raised to a sitting posture, and, after saying some prayers over some water, he opened the eyelids, and put in

[1] A specimen of this animal was presented to Professor Jameson of Edinburgh.

a large quantity of the red and black pepper, repeating some words at the same time. He then took some of the water, and poured it into his hands, which he dashed in the man's face. This was repeated several times, when the sepoy gave signs of returning to his senses, and shortly opened his eyes. On being questioned, he stated, that he got up about daylight to go to the jungle, and while out had observed a Chundun Goo near where he sat down, and had felt something like a thorn prick his foot, but took no notice of it. On getting back to his cot, he lay down to sleep again; and from that time till he was brought to his senses, he had no recollection of anything. On examining his foot, there appeared two small wounds on his heel, as from the bite of some animal. He was carried to his house at Dholka on a cot, and was many days before he got the use of the leg in which the bite was observed.

P. S.—It was the opinion of the people, from the symptoms, that it was the bite of the Chundun Goo, before they knew the man had seen one.

(Signed) GEORGE FULLJAMES,
AMEDABAD, August 3, 1839. Capt. 25th Regt. N. I.

2. The same day that I received your paper (the above case), a very intelligent native called on me; and, asking him about the animal, he described the effects of its bite precisely as given in Captain Fulljames's case; he said that its bite was more rapidly fatal than the bite of most snakes; and I find that all intelligent natives give the same account of the reptile; so that, although at first sceptical as to its being poisonous at all, I am no longer so.

(Signed) THOMAS ROBSON, Surgeon,
DEESA, 9th September 1839. 6th Regt. N. I.

3. During the time I was civil surgeon at Kaira (Guzerat), I saw a number of the animals in question, and killed several. They are generally to be found in trees, particularly the nimb, and also in the roofs of old houses. The natives appear to be more afraid of them than the most poisonous snakes, and assert that they will spring upon any person who may be passing near them, and that the bite is followed by almost instant death. Having examined the mouth of three Chundun Goos of the largest size with a magnifying glass, and not being able to detect the presence of poison fangs, I was disinclined to believe this; but one evening I was called to see a woman, living in the Wagaseeree (about 500 yards from my own house,) who was said to have been bitten by a Chundun Goo. My horse being ready saddled at the door, I reached the woman's house within five minutes from the infliction of the bite, but by the time I arrived there, she was dead. This occurred in 1832.

Very shortly afterwards, a Coombie (cultivator) residing at Hureeala (about three-quarters of a mile from my house) was also bitten, and, although I was almost instantly on the spot. I found him also dead.

(Signed) A. MACKELL, Surgeon, 9th Regt. N. I.

AHMADABAD, August 30, 1839.

(True Copies) D. C. BELL.

EDINBURGH, December 22, 1841.

ARTICLE IV.—*Account of a Child born about the end of the fifth month, which lived for six days. By* JOHN COCHRANE, M.D., *and Surgeon, Edinburgh.*

The following case, imperfect though the details be, seems so interesting, both in a physiological and medico-legal point of view, that I think it deserves to be placed on record in the MONTHLY JOURNAL.

In the course of last month, I attended a Mrs B., who was delivered of a male infant about the end of the fifth month of gestation. The child was born on the morning of the 19th, and seemed to be doing well till the night of the 25th, when he died. He thus completed nearly six days, during which he passed the urine and feces in a natural way, and seemed likely to thrive as well as a child come to the full time.

The testes had not descended. The weight was only two pounds and eight ounces; the length of the body was only 14 inches; the circumference of the chest was nine inches; the length from the vertex to the point of the nose six inches; and the occipito-frontal circumference eight inches. Considering the very small weight of the body, it is certainly remarkable that the child lived so long as he did.

I was most anxious to have been permitted to make an anatomical inspection of the body, but could not procure the consent of the parents.

EDINBURGH, November 18, 1841.

ARTICLE V.—*Observations upon a particular point in the Physiology of Death. By* FRANCIS THOMAS RICHARDSON, M.D. Edin.

> "There are stranger things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy."—HAMLET.

To become, as an individual who has of late been very much in the mouths of the public expresses it, "a damp, moist, un-

pleasant body," is very far from consonant with the feelings of the majority of humanity. There is an increasing opinion that

"This world is a sweet little world of delight,"

and a growing reluctance to pass that "bourne from which no traveller returns." No one feels a greater curiosity than can be hazarded with a due respect to his own personal safety, to enter upon an experimental investigation into the arcana of that undiscovered country—that "*terra incognita*," the route to which is described as going "we know not whither." Burke said, "the age of chivalry is o'er;" he would have been perfectly correct had he pronounced that of martyrdom to be so likewise. Individuals, it is true, with a reckless disregard to their own comfort, to propriety, and to the retention, in a becoming manner, of the correct appearance of the "human face divine," do occasionally make bodies of themselves. Into the causes of this extraordinary taste we do not intend to inquire: Some affirm that it depends upon the weather, and so the common continental appellation of November is, the month in which Englishmen cut their throats, imagining, doubtless, that this sad and gloomy season "accords with their souls' sadness;" but this, evidently, is a mistake, more suicides happening in the months of summer than at any other period during the year. Others attribute this inclination to kick the *bucket*, or, in more elegant language, to put themselves out of the *pail* of society, to the faculty of imitation, but whatever the cause of it may be, the opinion society entertains of the act is pretty evident, from its considering every such case of *felo de se* to be the act of a madman. We were then perfectly correct when we affirmed, that the age of martyrdom had passed, and that of respirators, ventilating gossamers, and patent safeties out-stripping in number the nights of the Arabian tales to have arrived. Inventions calculated to retard that fatal period which shall terminate the life of every one—that tick in the life of eternity—and with the same praiseworthy intentions, we trust the following remarks will receive their due meed of approbation, as they are intended to correct a vulgar fallacy, and to exhibit the truth of the seeming paradox, that when a person is said to be dead, he is not so in reality, but continues possessed of vitality for some time longer.

In pursuance of this same subject of death, it will be necessary to enter into a slight investigation of what life really is.

There have been two opinions entertained amongst the learned upon the nature of life:—the one that it is an entity, either material or immaterial, which, entering certain aggregations of matter, regulates as well their organization, as all the other phenomena which they exhibit;—the other, that it is merely an abstract term used to denote the sum of those functions of organized beings which are fundamental, viz., respiration, circulation,

nutrition, &c. The latter appears to be the true one, since the existence of the vital principle, as an entity, cannot be established, not to mention its incompetency to effect the phenomena attributed to it, even had its existence been proved. In stating this, however, we are aware we advance a position not generally held by the majority of individuals. In recording a sudden death, the favourite expression of the newspapers is, that the vital spark had fled—that scintillation of the divinity—the "*divinæ particulum auræ.*" And the sudden cessation of life, the instantaneous change from activity and vigour to the rigidity and quiescence of that sleep "which knows no breaking." is certainly a sufficient apology for imagining that something which was previously there has departed;—that this immediate change must be the result of the departure of some powerful substantial entity, which was the ruling principle, the spring of action, and the regulator of the human economy. But common though the opinion may be, we have had, and still have, too many proofs of the fallacy of common opinions, and the energy with which these opinions are retained grown venerable by years, and respected through the lapse of time, to hesitate for a moment in rejecting any assertion merely from its novelty and opposition to our preconceived ideas. We affirm, then, the true nature of life to be, that it is the sum of the functions; not the result of organization, but the result of vitality. Vitality is a property of organized matter, which, when acted upon by particular stimuli under favourable circumstances, gives rise to those properties or functions in the sum of which life consists, in the same manner that the combustibility of a candle does not depend upon any unseen entity of combustion existing in the candle, but is merely a property of a certain form of matter, which exhibits itself when exposed to the influence of oxygen and other substances, under favourable circumstances. And there is nothing improbable in this idea, for the endowment of a candle with the property which it possesses, is quite as wonderful and incomprehensible, as the impression upon certain other forms of matter of the property of vitality. And by this simple explanation of the subject, we can account for the phenomena of life in the different classes of animated nature, by one common and universal law, applicable at once as well to the highest as to the lowest, to the simplest as to the most complex of living substances, and thus avoid the absurdity of believing the invisible animalcule, and the mould of a stagnant pool, to exist merely in consequence of the presence of some invisible entity in their interiors.

Such being the view we have taken of life, we now proceed to observe, that when a person is said to be dead in common parlance, he is not so in reality; he is still possessed of vitality, as will be presently shown. But if this vitality, this "*aptitude à*

vivre," as the French writers express it, be acted upon by appropriate stimuli, the functions, in the sum of which life consists, will be restored. That such is the case in the generality of instances,—for in sudden deaths, as from the effect of electricity, life and vitality cease at the same time—the stiffening of the muscles and the coagulation of the blood prove. In the majority of deaths the muscles stiffen, and are susceptible of the influence of galvanism for a varying period. When they become flaccid, and refuse to answer to this impression, vitality has then ceased; but could the stimuli to which the other animal functions respond be applied to them, as in the case of the muscles, we should have them all acting as before, and life would be the result. Upon no other supposition can this stiffening of the muscles be accounted for; their response to the stimulus of galvanism is plainly not a property of inanimate matter, because it ceases in a short time, and cannot be restored. And that the animal functions may be restored after their action has evidently terminated, cases of apparent death, many of which have been attested beyond a doubt, show. In these, individuals, after remaining in that state for days, and being buried, have recovered and lived long afterwards; they were as much dead as any one is a few minutes after he is said to be so, that is, they were deprived of life, or, in other words, the functions in the sum of which life consists had ceased to act, but their vitality remained; and after being in this condition for a varying time, this vitality received the impression of certain stimuli which restored these functions, and thus brought the individuals back to life. But had this vitality departed from the body, even although these stimuli were present, they had not this vitality, this "*aptitude à vivre*" to act upon, the functions could not have been excited, and they would be absolutely dead; and this is the state of matters with the generality of individuals who do die. Upon this supposition only can we explain the fact, at least generally received as a fact, of the hair and nails growing after so-called death.

The practical importance of these remarks may not at first sight be obvious. Yet granting that they are true, which we trust we have satisfactorily shown, they impress upon us the necessity of correcting a custom but too common, especially amongst the lower classes of the community, namely, the hurried interment of the dead. We need not insist on the indelicacy and want of respect which this practice exhibits,—they are palpable to all. The corporeal tenement of all that was dear to us—the mansion of the soul—that which was the medium of communicating all those ideas which ennoble our nature, those sentiments consecrated to humanity, and those feelings which were so interesting to us,—*that* ought not so soon to excite within us disgust, but should com-

mand at least our respect. And that respect will be much more truly exhibited, not by enclosing the remains of mortality in a splendid sarcophagus, or erecting over the last resting-place of departed worth, mausolea, intended more to gratify the vanity of the living than to show respect for the dead; but by retaining these remains beside us until the resolution into their pristine elements shall have commenced. But not only ought this practice to be pursued from feelings of regard, but from the higher and more imperative one of common humanity. Having shown that it is not only possible, but in many instances has occurred, that the functions of life have been restored several days after apparent death; is the bare possibility of such a thing as being buried alive not sufficient to put a stop for ever to the practice of hurried interment? Such things have happened—coffins have been opened bearing evidence—affording "confirmation strong as proofs of holy writ," of the struggles which have there occurred between returning life and the horrors of their prison-house. And can any one contemplate for a moment such a result happening to his friends, or even to himself, without at once coinciding in our opinion? We state not that such events are of common occurrence; but the bare possibility of them is sufficient to warrant our insisting upon the point; and were this idea of vitality remaining after the departure of life of no importance in a physical view, its practical consequence is our apology for offering the remarks we have made upon the subject.

ARTICLE VI.—*Case of Hemorrhage following the Extraction of a Tooth, and terminating fatally.* *By* DAVID HAY, M.D., *Fellow of the Royal College of Surgeons of Edinburgh.*

A gentleman, aged 31, on Sunday the 19th of December, suffering extreme pain from toothache, had the *dens sapientiæ* of the right side extracted. The tooth was loose and decayed, and was removed by the dentist, Dr Roberts, with the forceps without difficulty, and without any considerable force.

His mouth was instantly filled with blood; and the blood continuing, pressure was applied after touching the socket with camphorated spirit, and afterwards with oleum terebinthinæ.

On the 20th I called to visit another patient in the house, and was told that Mr P. had undergone the operation of tooth-drawing the day before, and that the oozing of blood still continued, but that effectual pressure had been made by the gentleman who had extracted the tooth. At 4 A.M. of the 21st, I was called to see him, and told that the bleeding had increased to a formidable extent, and that he had sent for Dr R. late in the evening, who

first applied lunar caustic, and then very firm pressure. When I examined the mouth, I thought it improper to remove the compress, as the bleeding had moderated, till it was possible to examine the mouth by day-light, and advised the use of a strong solution of alum and cold to be applied to the face, by means of a bladder partially filled with snow, and all the food and drink he took to be cooled with ice.

At 9 A.M., the bleeding continuing, I removed the compress, and examined the gum and socket carefully. The caustic had blackened the parts so much, that it was impossible for a time to discover the exact point from which the blood issued. At length I observed a stream from the inside of the gum next the cheek, and to this point I applied the actual cautery with effect; —a firm compress of lint was placed on the parts. He had also a saturated solution of acetate of lead, to make use of in case of bleeding.

In the course of the day, the hemorrhage returned, and Dr Roberts again applied the cautery, pressing it into the socket of the anterior fang of the tooth, from which he discovered the blood to be discharged immediately after its removal. In the evening the bleeding had moderated; and as the acetate of lead appeared to have no particular power in checking it, the alum wash and cold applications were made use of in preference.

Early in the morning of the 22d, I was again summoned to him, the bleeding having recurred with considerable violence after midnight. It had again subsided at the time of my arrival. I felt unwilling to remove the compress and clots till day-light, from the difficulty of using the cautery by candle-light, which appeared to me the most powerful means I could employ. I gave him a brisk purgative of compound powder of jalap, which operated well, at the same time inducing nausea, which checked the bleeding for a while. The stools were black and pitchy, consisting almost entirely of the blood which had been swallowed.

During the 23d, the bleeding was more moderate, but it was evident that a considerable quantity passed downwards, the stools consisting chiefly of coagulated blood. He took frequent doses of the pulv. sulph. alum comp. with sulphuric acid, and occasional doses of the acidulated solution of sulphate of magnesia.[1] The cold applications were continued, and pressure made by means of compressed sponge, till the evening, when Dr Roberts inserted a portion of sponge tent into the socket of the tooth.

On the 24th, notwithstanding the sponge tent and compression, the oozing continued; and his lips having become blanched

[1] The solution of sulphate of magnesia with sulphuric acid, I have often found very useful in purpura hemorrhagica.

and his pulse small and frequent, it was evident that he was in a very perilous state. Mr Nasmyth now visited him at 2 P.M. He did not think it advisable to remove the sponge tent, but rather to keep up a moderate degree of pressure over it by means of lint, and as the styptic powders nauseated, that they should be continued.

On the 25th, there was less bleeding, though the saliva which ran from his mouth was reddened. The 26th and 27th he remained nearly in the same state, there being a greater disposition to bleed at night, which prevented him going to bed, and induced him to remain on a sofa in a half erect posture. The sponge tent became raised, and as it was producing no benefit, it was removed. A portion of the skin of the lip, which had been accidentally touched when the cautery was applied, evinced the hemorrhagic tendency, as it continued oozing blood for several days. The sloughs produced by the cautery and caustic now were gradually thrown off, and on Wednesday the 29th there was nearly a cessation of bleeding.

His strength was much exhausted,—his surface pale and lips blanched,—his pulse frequent, from 100 to 110, feeble, and compressible. He took the saccharine carbonate of iron in frequent doses, with sulphuric acid, and afterwards with nitric acid.

On the 30th, he complained of pain of the face and gums, which were swollen and spongy; the gums again began to bleed from various points both of the upper and under jaw. The slough was completely detached from the original site of the bleeding, and the alveolar process was felt bare with the appearance of threatened exfoliation. Camphorated spirits and oil of turpentine were occasionally applied to these spots; and the tincture of kino in water, chloride of sodium, bark and alum washes to the mouth frequently.

On the 2d and 3d of January, the spongy condition of the gums continued to increase, and near the points from which the tooth had been extracted the gum became very broad and flattened. At this period the sponginess of the gums was very remarkable, resembling in appearance that observed in sea scurvy, the swelling of the gums of the inside of the mouth extending almost to the edges of the teeth. He no longer passed blood by stool, yet his strength visibly declined. He tried lemon juice, substituted Battley's solution of yellow bark for the iron, had wine, at first in moderate quantity, and afterwards in fuller measure, with animal broths, calf's foot jelly, eggs, &c.

On the morning of the 8th, he fainted when rising from the sofa, on which he still preferred remaining to being in bed; he complained also of dimness and indistinctness of vision. A solution of nitrate of silver (30 grs. to ℥ j. of water) had been used to check the oozing from the gums from the 4th to the 6th; when

Mr Nasmyth substituted the acid solution of the nitrate of mercury, which appeared to be more powerful in arresting the bleeding, and occasioning the gums to contract and become paler.

Dr Abercrombie visited him on the 9th, recommended his washing the mouth frequently with a strong solution of sulphate of zinc, and touching the gums twice or thrice a-day with pyroligneous acid, continuing the same means of holding up his strength, and augmenting his wine.

The 10th, in the morning, he vomited, apparently from swallowing the zinc wash. The gums had shown a disposition to slough, particularly in the upper jaw, on each side over the canine and anterior molar teeth. He still complained of the blindness, and suffered from want of sleep. It was agreed that he should have an opiate at bed-time, which produced a good effect.

On the 10th, part of the slough over the right canine tooth of the upper jaw had become detached; that on the left side showed a line of separation; his pulse, however, was extremely feeble and compressible, notwithstanding the free administration of wine, &c. At 4 P.M., there was slight subsultus; there had been a trifling bleeding from the part whence the slough had been separated, and on the opposite side the portion of gum beyond the line of separation had become livid. At 7 P.M. the unfavourable appearances continued; there was more subsultus and greater prostration of strength, although he sat up in bed, and allowed Mr Nasmyth and myself to examine his mouth. At 11 P.M. I found him still weaker, swallowing with difficulty, moaning, and restless, although an opiate had been given. I gave him some brandy and water, which he had difficulty in swallowing. At 4 A.M. of the 11th, he expired, being the 22d day after the extraction of the tooth.

This gentleman had enjoyed very good health, and was in fuller condition than usual when his tooth was drawn. Four years previously he had a tooth extracted, when bleeding to a troublesome extent took place, but which was stopped by the application of caustic. In justice to Dr Roberts it is proper to mention, that he was not informed of this circumstance, when he was called on to remove the *dens sapientiæ*.

His gums were disposed to bleed at all times. The hemorrhagic tendency in this case was shown by the bleeding from the lip, and by repeated slight epistaxis, which occurred first on the morning of the 22d December, and took place to a trifling extent the day before he died.

The use of undiluted sulphuric acid was thought of as a means of stopping the bleeding, but was refrained from, on account of the difficulty of confining its action, and our unwillingness to extend the slough, already considerable. Ligature of the carotid

artery was also thought of, but the want of success in similar cases did not afford encouragement to the measure.

In the progress of this very distressing case, two periods are evident; the first, that of active hemorrhage succeeding the operation, and continuing to the 29th of December, when it had almost entirely ceased, and when Mr Nasmyth, Dr Roberts, and myself entertained hopes that he would gradually regain strength, and recover from the great loss of blood he had sustained. The second, commencing on the subsequent day, the 30th, when he complained of pain of the gums and face, and which was the beginning of that deranged condition of the system which steadily increased, and terminated his existence, under symptoms resembling those of sea scurvy.

Similar cases to the one now read to the Society have not unfrequently occurred, and are to be found scattered in the medical journals, as well as in systematic works; a few of these I shall now shortly mention, in almost all of them the hemorrhagic constitution has existed, as shown from profuse bleeding from slight wounds, or mere abrasions of the surface.

M. Jourdain, (*dentiste,*) in his "*Traité des Maladies et des Operations Realment Chirurgicales de la Bouche,*" published at Paris in 1778, tom. ii. p. 595, says, "Nombre d'auteurs font mention d'hemorrhagies procurées par l'extraction des dents, dont les unes ont été arrêtées, et les autres ont conté la vie aux malades. Holler, (Comment. Aph. 18. 2,) fait mention d'une hemorrhagie mortelle procurée par l'extraction d'une dent. Plater cite un exemple semblable d'un œuvrier en fer, mais qui en mourut. Zacutus a guéri une hemorrhagie terrible et desesperée, qui resistait au fer rouge, en injectant dans l'alveole de la dent extirpée l'emplâtre galenque. Felix Plater dit, en 1559, un Serrurier etait travaillé d'une douleur de dent à cause d'une fluxion; il se la fit arracher, mais on ne pouvait arrêter le sang qui sortait, quoiqu'on essayât de toutes sortes de remedes, par haut, subtils rouges et echauffés; ce qui me fit juger qu'une petite artere etait offensée; il ne cessa point de couler jusqu' à la mort." Observ. xxxv. lib. 4.

M. Jourdain considers compression as deserving the preference over the cautery, and says, that in urgent cases where there has been considerable injury done to the socket, recourse may be had to the machine invented by M. Foucon, the uncle, and of which there is a description and representation in the 7th vol. in 12mo, of the *Mémoires de l'Académie Royale de Chirurgie.*

Hemorrhage, he says, sometimes takes place after an interval of several days after the extraction of a tooth; he mentions a case in which this occurred on the 5th day after the extraction of the first large molar; another in which the bleeding took place on the

3d, in consequence of the use of irritating applications. He mentions also a case in which the bleeding returned on the detachment of the eschar produced by the actual cautery.

M. Duval, in a treatise published at Paris in 1802, enumerates as one des accidens de l'extraction des dents, une hemorrhagie dont les suites par fois ont été mortelles, au rapport des plusieurs observateurs.—Cardan. de Causis et Signis Morbor., p. 155.
Felix Plater, as already quoted.
S. H. de Vigiliis Bibliothec. Chirurg., p. 782.

M. Duval is of opinion that this accident is fatal, in consequence of the neglect of patient or practitioner in using proper means. He probably had not met with cases in which the hemorrhagic constitution existed. He quotes from Arnaud Gilles a fatal case, and one which was saved by the use of pressure produced by the half of a bean. Arnaud Gilles' Treatise is dated 1622.

In the 8th volume of the *London Med.-Chirurgical Transactions*, 1816, there is a case by Mr Blagden.

Joseph Lancton had a tooth extracted while a boy; hemorrhage continued twenty-one days, and then ceased. Hemorrhagic disposition was shown from slight wounds; in 1815, a slight wound of the forehead gave rise to profuse hemorrhage, ligature of both ends of the bleeding vessel failed; the bleeding was eventually stopped by the application of the *kali purum*.

After suffering from toothache for a considerable time from the fear of bleeding, he had the second molar tooth of the upper jaw of the left side extracted on the 30th of June; no particular injury was sustained by the jaw, but there was an abscess at the root of the tooth which either was in or connected with the maxillary sinus. A profuse hemorrhage immediately took place from the alveolus; on the evening of the 1st of July, as the bleeding continued, lunar caustic was applied to the alveolus, then solution of blue vitriol, cold applications, and plugging. On the 4th, the bleeding continuing, Mr Brodie applied the cautery, which restrained the hemorrhage for six hours; in the evening it returned as violent as before. The alveolus was again stopped, and the cautery applied twice, but the bleeding continued notwithstanding. In applying the cautery, a great deal of matter escaped, apparently from the maxillary sinus.

On the morning of the 5th, the patient became very low and depressed, and his situation alarming. It was now determined that the carotid artery should be tied, which was done by Mr Brodie about 10 A.M. The hemorrhage still continued from the alveolus; the wound made in the operation bled little at first, but in the course of a few minutes began to bleed profusely. Ice was applied to the wound, and to the face, and while this was continued, the bleeding was suppressed, but it returned immediately on the ice being removed. The bleeding from the tooth was

stopped for a few hours: it returned however, and the patient died at 5 A.M. on Sunday morning the 7th July, a week from the time of the removal of the tooth. On the trunk of the carotid there were several opaque white depositions on the outer surface of its inner coat, such as precede ossification; the branches appeared to have their coats thinner and more transparent than usual.

In the 12th volume of the *Edin. Med. and Surg. Journal*, page 500, a case of fatal hemorrhage is shortly reported as having occurred in London, which resembles the above in all particulars, and is probably the same case. There is also the report of a death from hemorrhage after cupping, in which it was found that the blood did not coagulate.

In Dr Johnson's *Med.-Chirurg. Review* for July 1838, there are some remarks on and cases of constitutional hemorrhage. One of these, No. 4, a man 40 years of age, of a soft, lymphatic constitution, was subject to most troublesome hemorrhage from very slight wounds. On two occasions, the bleeding after the extraction of a tooth had required for its arrest continued compression for several days. At another time it was necessary to use the actual cautery to stop the bleeding from leech-bites; and the same means were on one occasion requisite to stop the bleeding from a simple wound of a finger. Several times, large ecchymoses had formed after very slight bruises. In this paper, the sulphate of soda is mentioned as having extraordinary power in arresting hemorrhage in some of these cases. It was found, that if this salt were taken for several days successively, in doses large enough to purge the bowels, the bleeding ceased, and the wound began to cicatrise.

Krimer also alludes to the efficacy of this remedy in such cases, particularly to the history of one family, of which all the male descendants for four generations had been most strikingly subject to hemorrhagic accidents. M. Sanson, in his *Concours Thesis* for 1836, mentions the case of a man who died from a urethral hemorrhage. Six of his children had perished from the bleeding from casual wounds.

In the cases 2d and 3d, the hemorrhagic constitution was accompanied by rheumatism; in No. 3, from the *Archives Générales* for October 1833, all the males of the family were subject to occasional spitting and vomiting of blood; also to hæmaturia, epistaxis, and to troublesome hemorrhage from any part which might chance to be wounded. All of them suffered from troublesome rheumatic pains whenever they were affected with any form of hemorrhage.

In the 20th volume of the *London Med. and Physic. Journal*, 1808, there is an account of a hemorrhagic disposition existing in certain families, by John C. Otto, M.D., of Philadelphia; this

disposition being transmitted almost entirely to the males, and shown upon the slightest scratch or most trifling cut. In one of the instances, Dr Otto says, so assured are the members of this family of the terrible consequences of the least wound, that they will not suffer themselves to be bled on any consideration, having lost a relation by not being able to stop the discharge occasioned by this operation.

In this paper, the sulphate of soda is mentioned as a remedy. "A few years since the sulphate of soda was accidentally found to be completely curative of the hemorrhages I have described: an ordinary purging dose, administered two or three days in succession, generally stops them, and by a more frequent repetition, is certain of producing this effect."

"Dr Rush," continues Dr Otto, "has informed me that he has twice been consulted, in the course of his practice, upon this disease; the first time by a family in York, and the second by one in Northampton County, in this state. He likewise favoured me with the following account, which he received some years since from Mr Broadley, of a family in Maryland afflicted with this idiosyncrasy:—'A. B., of the state of Maryland, has had six children, four of whom have died of a loss of blood from the most trifling scratches or bruises. A small pebble fell on the nail of a finger of the last of them when at play, being a year or two old; in a short time the blood issued from the end of the finger, till he bled to death.' The sister shows not the least disposition to this disorder, although scratched and wounded."

In *The Lancet* of 20th April 1839, there is a case mentioned in the clinical observations of Mr Liston, which had just been discharged from the hospital. "A farmer, 32 years of age, and temperate; he is of the hemorrhagic diathesis, and he states that this is hereditary; that his maternal grandfather was of the same idiosyncrasy, and bled to death from a spontaneous hemorrhage taking place from the nose and mouth, after having been affected with fever. His mother is a little, delicate, fair-complexioned woman, but not of a similar diathesis. He has six brothers, all with the same peculiarity of constitution. None of his five sisters are affected with it. Four of his brothers, as well as the patient himself, have lost alarming quantities of blood at different times from the extraction of teeth. The hemorrhage was generally at length commanded by pressure, though in one instance the actual cautery was applied. The case of one of them is recorded by Mr Kendrick of Manchester Street, in the 5th volume of the *Medical Gazette*, p. 788. The bleeding from the socket of a tooth was so profuse, and returned so repeatedly, that the patient was reduced to the lowest ebb. Mr Kendrick at last succeeded in arresting the bleeding, by the application of pledgits of cotton wool soaked in the strongest spirit. The patient him-

self is a large, strong-made man, with a smooth, fair complexion, dark-grey eyes, dark hair, sandy whiskers, and pulse about 84. When about 19, he had a small wart cut from his lip, from which he lost so much blood that he fainted, and for some days after experienced great debility. He has, too, as stated, suffered from the extraction of teeth. Some weeks ago, he says he had a fall, and hurt his back and loins. Some days after, a pain came suddenly in the left groin, accompanied, also, with a pain in the thigh, shooting downwards to the knee. Upon examination, he found a swelling in the groin, upon which he took the advice of a surgeon, who ordered leeches and fomentations. Only two leeches were applied, the hemorrhage from which could not be suppressed till the occurrence of syncope. There is now a collection of matter in the left groin, of the size of the patient's fist. It was opened with the potassa fusa, and there was but slight bleeding. The blood was deficient in fibrine."

PART SECOND.

REVIEWS.

1. *The Cyclopædia of Anatomy and Physiology. Edited by* Robert B. Todd, M.D. F.R.S., &c. &c. *Article* Microscope.

2. *Elements of the General and Minute Anatomy of Man and the Mammalia, chiefly after Original Researches. By* Tr. Gerber, *Prosector in the University of Berne. With Notes and an Appendix, by* George Gulliver, F.R.S. 8vo. London: Baillière. 1842.

More than 200 years have elapsed since the invention of the microscope, and we are only now commencing to reap those advantages which the instrument is capable of conferring upon medical science. This is in a great measure to be attributed to the imperfections which have existed in the instrument itself, but more in our opinion to the want of caution and theoretical doctrines of those who first made use of it as a means of research. On this point Raspail justly observes, "a fatal idea which took possession of men's minds even from the period of its invention, has unceasingly exerted its influence over the observations made with the microscope, in defiance to the observer's rectitude of judgment; and it has paralysed the ablest efforts, and deluged science with ridiculous systems, or erroneously stated facts. From the moment, indeed, that the combination of two or three lenses enabled men to contemplate things which were invisible to the naked eye, the disposition towards the marvellous led them to exclaim, 'A new world is laid open before us;' and this world appeared to be regulated by new laws,—every thing in it was interesting, but every thing was inexplicable; and the importance of the microscope was limited to its taking the place of the phantasmagoria in public courses, and furnishing in the closet a relaxation from arduous researches." Hence may be readily understood how preconceived opinions or wild speculations blinded the judgments of some in their interpretations of facts, or how others mistook for facts and realities, what have since been demonstrated to be mere optical illusions. Thus Kircher considered most diseases were produced by animalcules, and mistook all loose floating bodies, as the globules of the blood, pus, &c. to be minute living beings. Borelli even tells us, that he has seen the animalcules in

the pus of chancre deposit their eggs. In the same manner preconceived ideas led Malpighi, in his microscopic observations, to see glands in almost every texture, and Mascagni lymphatics. Again, Monro detected twisted fibres in every tissue, which, however, he himself at length recognised to be optical illusions; and many are the individuals who have described the ultimate structure of numerous textures to be globular, an opinion now also well known to have originated in deceptive appearances.

The history of microscopic investigation, thus, like that of every other scientific pursuit, presents us with numerous errors, the exposure and refutation of which have materially assisted in furthering our present knowledge. Hence, we are in no way to look with contempt on the observations of former microscopists, but rather, taking into consideration the numerous difficulties with which they had to contend, admire the rare sagacity and unwearied patience which must have been exercised before they could have arrived at many of their results.

It is to the labours of the anatomists and physiologists of the modern German school that we are principally indebted for most of the *positive* information we possess in histiology. Many of these illustrious men, who have, as it were, built up their reputations on their discoveries, made by means of the microscope, were content to work laboriously for years before they ventured to make positive statements. This, also, they did not in a vague, loose, and irregular manner, but by, first, studying the instrument itself; secondly, by making themselves acquainted with the optical illusions to which it gives rise, so that these might not be confounded with the structure examined; and, lastly, by making their inquiries with that attention, precision, and freedom from hypothesis which it is necessary to bring to the prosecution of this, or indeed of every scientific subject.

Of late, also, the employment of the microscope has become more general in the prosecution of anatomy and physiology amongst the British cultivators of those sciences, and the existence of Societies, and a Journal in this country devoted to a consideration of the facts discovered by this instrument, indicates a growing appreciation of their importance. But we loudly protest against the unscientific names now conferred on various pursuits, and the fashion now so prevalent of denominating every thing microscopic, simply because it is connected in some way with the microscope. We can understand what is meant by a microscopic object, namely, one which is so minute, that the eye requires to be assisted with glasses in order to examine it: but the terms "microscopic anatomy," "microscopic society," "microscopic journal," and, above all, "microscopical science," appear to us totally unworthy of the spirit of the age. The microscope is only an instrument, a means of arriving at information in any of the

departments of science, by its power of assisting vision. It cannot create science, inasmuch as the same laws govern minute and large objects. The physician employs a stethoscope to assist audition, by means of which he is enabled to hear sounds which would otherwise escape him. Yet how absurd would it appear, did the cultivators of practical medicine found stethoscopic societies, institute a stethoscopic journal, or talk of stethoscopical science! Who again would ever think of calling astronomy telescopical science. But whilst we censure the terms employed, let us do justice to the motives, and honour the enthusiasm of those who have brought the microscope prominently forward as a powerful means of furthering science and arriving at truth. In this, the real object of the microscopic societies and journal, they merit our warmest sympathy and support, and in its prosecution we earnestly wish them all possible success.

It is evident that before any one can hope to advance anatomy or physiology by means of the microscope, he must be acquainted, not only with the proper method of displaying the objects for examination, but with the principles on which it is constructed; in short, with the instrument itself. Thus, it is necessary to possess a well-grounded knowledge of the optical phenomena on which its construction is based, so that we may be enabled to change or modify the apparatus employed, as circumstances may require. It is also essential that the observer should be acquainted with the laws which govern the reflection, refraction, concentration, and decomposition of light; the mode in which it may be modified, extended, increased, or diminished, by the application or combination of variously formed glasses; and above all, the appearances or optical phenomena produced by luminous rays when transmitted through or reflected upon transparent bodies of different forms, densities, colours, and structures. It is to ignorance of these points, indeed, that most of the errors of the early observers are to be attributed; and recent publications sufficiently attest, that even now it is exercising a prejudicial influence.

These optical illusions, however, are exactly what few study or understand. The moment a young anatomist obtains possession of a microscope, he is anxious to make discoveries, and commences the investigation of structure at that point where men who have spent years in the pursuit are obliged to abandon it. We have frequently remarked such a person, for instance, without any idea of the normal or healthy structures, endeavour to find out the ultimate element of all animal textures, or seek to discover the nature of inflammation or tubercle! The consequence is that he makes most ridiculous mistakes, wearies himself with fruitless efforts, loses his time, and at length his patience, and is then too apt to ascribe to the instrument, those

faults and imperfections with which he alone is chargeable. If, on the other hand, from possessing an imaginative disposition, and great confidence in his own researches, he be induced to publish the result of his observations, he brings ridicule upon himself, and discredit upon the microscope, inasmuch as the ignorant cite him as another instance of the confusion resulting from microscopic observation.

We are convinced that much of this arises from the absence of systematic instruction, and the non-existence of any work in the English language, to which the anatomical student might refer for information. We had anticipated that in the article *Microscope*, inserted in the *Cyclopædia of Anatomy and Physiology*, we should have been presented with all that the present state of science is enabled to communicate to those desirous of investigating organized structure; but in this we are completely disappointed.

Whilst the author, Dr Carpenter, has compiled from various sources, much information that every microscopist ought to be acquainted with, he has not alluded to many topics which more particularly interest those to whom his observations are addressed. So much, indeed, is this the case, that we are at a loss to conceive, how an article so defective in this respect, could have been inserted in a work intended for anatomists and physiologists, since to them it is of little practical value. Nothing whatever is said of the optical illusions which so often puzzle the anatomist, and the necessity of an acquaintance with which we have before alluded to. No mention is made of polarization, and its application to the examination of texture. There is not a word on the proper mode of displaying or demonstrating objects under the microscope; or on the method of putting up or preparing microscopic preparations; all which, we hold, the subscribers to that work, taking the present state of science into account, had every right to anticipate would be found in the article now under review. But the learned editor may possibly have made such arrangements, that these deficiencies are to be supplied in some other article, that of *Tissue*, for instance, which doubtless will be written by an anatomist practically acquainted with the subject.

Let us, however, examine the article as it is. The author observes,—

"We propose in the present article, to take a general view of the principles, optical and mechanical, which are concerned in the construction of the microscope; and then to give an outline of the results of some of the most recent inquiries in which it has been profitably employed, confining ourselves chiefly, however, to those which concern the origin and formation of the principal organized structures." P. 331.

But the second part here referred to, which Dr Carpenter, from his literary knowledge, would probably have rendered histo-

rically useful, and even interesting, appears entirely to have escaped him; for there is not one word regarding the microscopic examination of structure, in the twenty-seven closely printed pages of which the article consists.

Thirteen pages are devoted to a consideration of the optical principles which govern the construction of the microscope, which, with the illustrative diagrams, convey a concise notion of this subject. As there is nothing new, however, we need not be detained by them. The author remarks, (page 343), "that the length of the body cannot be *much* increased with advantage, but a *moderate* variation will be found useful in many ways." We think this a little vague. What is meant by the terms "much" and "moderate" here? A knowledge of this is more necessary, as in page 340 it is again somewhat loosely stated, that to a *limited* extent it may be useful; while we learn in a note, that Charles Chevalier constructs instruments, the tube of which may be lengthened three or four feet.

In the second section, the author treats of the mechanical arrangements of microscopes, and lays proper stress on the essential conditions to be attained in their construction, as steadiness and firmness in all the parts—capability of accurate adjustment—the power of placing the instrument in either a vertical or horizontal position—and *simplicity* in the construction. The only comment we think it necessary to make on this part of the article, is, that Dr Carpenter has entirely mistaken the object of the horizontal position given by Charles Chevalier to his instruments. During continued manipulations a vertical or oblique position can be at once given to the body of the microscope, and thus the fatigue in the arms, which Dr Carpenter considers a great objection, need not be occasioned. On the other hand, the adaptation of the prism possesses great advantages for delineation and mensuration, and this without the necessity of changing the position of the stage.

We think the next six pages, devoted to a description of particular instruments, and the mechanical parts, somewhat prolix and unnecessary. Four columns and a half, for instance, are taken up in describing the particular instrument used by Dr Carpenter himself, which, so far as we can judge, is in no way superior to the generality of good microscopes, and is evidently inferior to that manufactured by Mr Powell, to which the Editor has alluded in a note, and to whose commendations we may add our own. But we have uniformly observed that every microscopist is partial to his own instrument, especially if he have had a hand in its construction: this is natural. He knows its qualities; is enabled to exhibit them with more advantage than similar ones pertaining to an instrument with which he is not familiar; it is associated in his mind with many hours of improvement and instruc-

tion; in short, it is a species of attachment somewhat similar to that which a sailor feels for the ship in whose management, distresses, dangers, and exploits, he has taken an active share.

In speaking of the different modes of illuminating objects, there is a long paragraph on directing the light obliquely, by turning the mirror aside (p. 352). The phenomena described are much more readily produced by employing the diaphragm of Le Bailliff, which, in our opinion, is indispensable to a good microscope, and of which, by the bye, nothing is said. The directions for illuminating opaque objects, a point of much practical importance to the anatomist, are very unsatisfactory. We suspect that if the author had been in the habit of illuminating certain opaque anatomical preparations, such as very fine injections for example, he would find the "bull's eye, or hemispherical lens of *four inches* in diameter" very insufficient.

The following passage is good, and conveys practical and useful information. It refers to drawing objects by means of the camera lucida.

"Much will depend upon the advantageous adjustment of the amount of light upon the object and the paper respectively. In drawing or measuring by lamp light, we have found it useful to place a small taper near the screen, so that its direct rays may fall upon it, whilst the lamp is used for illuminating the object; and when the screen is illuminated by daylight, it is preferable still to use the lamp for the other purpose. The point of the pencil should be blackened. The micrometer eye-piece also may be employed for drawing; its squares being represented by squares on the paper; and the portion of the object between each being delineated in the manner commonly practised by artists. No assistance of this kind, however, can supply that skill to the microscopic draughtsman, which is required for making finished delineations of any object. Accuracy of outline is all that they can insure." P. 356.

From what we have said of this article, our readers perceive that it is not at all suitable to the work in which it appears. The anatomist and physiologist can derive very little benefit from its perusal, and the practical physician or the student will find in it few inducements to adopt the instrument as a means of research, and nothing to guide him should he make the attempt.

Dr Gerber's work, from being the first which has appeared in the English language, devoted to a systematic consideration of histology, based on microscopic researches, as well as from its intrinsic merit, demands our attention. It conveys to us in a compendious form, a general idea of the present pathological notions of the German school, which, if true, must modify in a great measure many of the doctrines generally received in this country. The views alluded to, unquestionably claim the careful attention of all who are interested in the progress of medical

science. On this account, and because the work contains so much that is new and interesting, we feel called upon to devote more than usual space to an analysis of its contents.

We must premise, however, that the work contains nothing of *general anatomy*, properly so called; that is of the kind of anatomy so ably treated by Bichat and Beclard, and is in fact only valuable for its histological information. It is drawn up in the form of numbered paragraphs, under various heads, constituting a species of compendium or outline. There are no minute observations or details given, which is much to be regretted, when we take into account the novelty and importance of many of the statements brought forward. Indeed the summary and decided manner with which this author has settled some of the most difficult and intricate questions in anatomy, physiology, and pathology, renders it necessary for us to caution the inexperienced, not to receive too readily all the assertions he has made, some of which, as we shall afterwards see, are sufficiently startling. The author has not overlooked the histological changes produced by disease, nor lost sight of organic chemistry in his researches, proving to us that his ideas, in common with those of his countrymen generally, regarding the proper mode in which structure ought to be studied, are founded on an enlarged and philosophic basis. If the microscope is ever to confer benefit on medicine as a practical art, it is combined with such knowledge, that it ought to be applied. We fully concur in the following remarks.

"The microscope, now recognised as indispensable in general and pathological anatomy, ought also to take its place among the implements most needful to the practical physician. It seems impossible, indeed, to over-estimate the extent to which the science and art of medicine would be advantaged, were every well-informed and zealous practitioner carefully to examine each morbid product he encountered, and to communicate the result of his inquiries along with a compendious history of the case." *Preface* vi.

The notes and appendix of Mr Gulliver add considerably to the value of the work. With this general statement of our opinion, we proceed to give our readers an analysis of its contents.

After giving a general review of the chemical constituents of the animal body, and of the interchanges and general transformations of organic matter, we are presented with the following passage on what the author calls the hyaline or vitreous substance:

"The hyaline or vitreous substance forms a considerable constituent element in the animal body. Although amorphous in itself, it must still be associated with the organic parts, inasmuch as it is formed contemporaneously with other more highly organized elements, as it stands in a certain relationship to these, and for its maintenance requires, like them, a perpetual interchange of substance. The vitreous element is translucent in every degree to perfect transparency; it is colourless, or but slightly tinged; gene-

rally it is of firm consistence, and highly elastic. It serves as a transparent medium for optical purposes, as in the crystalline lens of the eye; as a protecting and sheathing medium, as in the Whartonian pulp of the umbilical cord; or as an elastic bond of union,—as an intercellular substance, for instance, in the cell including vitreous matter of cellular cartilage, in the cartilage of the bones, and in the canalicular or tubular structure of the teeth." Pp. 27, 28.

Thus, this hyaline substance is considered by the author as being imperfectly organized—a step removed from solids, precipitates, crystals, gravel, accidental or mechanically formed concretions, and so on. No doubt, if it be not organized, it possesses the germs of organization, and probably, as our means of investigation are improved, these may even be detected. We know that the hyaline substance of some cartilages becomes developed into bone or fibrous matter. The recent researches of Mr Nasmyth also have shown, that the intertubular substance of the teeth is composed of cells, and is consequently more highly organized than the author supposes.

Amongst the animal constituents placed higher in the scale of organization than the hyaline substance, the author places *Fibrine*. On this point he observes,

"The fibrine which is held dissolved in the serum of the blood and of the lymph may be regarded as the general formative element or blastema—that principle which, under the influence of the primary and secondary organic processes, is fitted to assume all the shapes which we observe in the constituent parts of animal bodies. Fibrine left at rest, consolidates, under all circumstances short of those which act by decomposing it, first into a determinate hyaline substance, which in the greatly debilitated and in the dead body, and also out of the body, when left to itself, falls into granules, or forms an aggregated granular mass." (P. 28.) . . . . "When it coagulates in contact with the interior of the living body, immediately higher organic processes are proclaimed in the formation of compound corpuscles, which either swim free in the fluid, as the globules do in the blood, or they appear as isolated bodies disseminated through a hyaline substance, or variously arranged without any common bond of union, and so obtain their final development; or they present themselves as mere transition forms of more highly organized products, which, with the final completion of the development, disappear entirely." Pp. 34, 35.

To these corpuscles he gives the same name which Schleiden applied to similar bodies in the vegetable kingdom, viz. *cytoblasts*, *cell germs*, or *encased nucleoli*.

The following forms the basis of the author's classification of animal structures:

"In animal bodies, two classes of solid precipitates from vital fluids may be distinguished, each of which has a different organic signification. Some are *objective*, *i. e.* they form no immediate integral part, essential to the life of the organization; and others are *subjective*, *i. e.* they form immediate, original, and indispensably necessary parts of the body. In other words, we have *aplastic* elements—elements susceptible of no farther amount of organization; and *plastic* elements—elements which bear within them the

germs of higher forms. Each of these classes of elements forms two orders. The objective or plastic fall into, 1st, *inorganic crystalline;* and, 2d, *semi-organic non-crystalline*, mechanically fashioned. The inherently vital cell germs again divide themselves into (*a*) *monoplastic*, which retain their primary forms; and (*b*) *polyplastic*, which lose their primary shapes, transform themselves into all the organic forms, and in fact are destined to one that is higher." Pp. 35, 36.

The organic granules, which constitute so large a portion of animal textures, are thus spoken of:—

"The precipitate of extremely minute, soft, organic granules, so universally encountered in the animal body, appears for the most part to consist of albumen. These granules would seem only to form cell germs, or nucleolated nuclei, when the coagulation of the fibrine takes place otherwise than in vital association with the internal structures of the individual who engenders it. There is scarcely a watery or mixed animal fluid without its granules. Wherever albumen in solution is met with, there will granules be discovered." P. 37.

And yet farther on, he observes,

"The number of granules present, never bears any kind of ratio to the quantity of albumen in solution; so that a fluid which contains albumen in the proportion of fourteen, may present no more granules than one which contains albumen in no higher a proportion than one. The nucleus of a cell germ, the nucleolus of a nucleated cell, often exhibits the precise appearance of a granule; but it can never be confounded with this, nor ought it ever to be spoken of as synonymous with a formation of so much lower significance." P. 40.

We cannot help thinking that there is some obscurity here; for we have puzzled ourselves in vain to make out whether the author draws any distinction between albuminous and fibrinous granules; and if so, in what the nature of that difference consists. Mr Gulliver adds a long and valuable note on this subject, the importance of which fully warrants his dwelling upon it. Indeed, we cannot but feel grateful to this gentleman, for the information he has contributed to the mysterious process connected with the effusions and morbid changes of fibrinous matter. He has the merit, for instance, of having satisfactorily shown that the substance which Gendrin and Andral have described as constituting a collection of pus in the clots of blood—abscesses of the blood, so to speak—was in point of fact, only softened fibrine, a result much more consistent with our notions of correctness. He has also found in clotted fibrine, simple and compound corpuscles, and in a few instances, true cells—a circumstance which would place this substance, even at an early period, amongst a higher class of organized materials than previous observers have been willing to admit. We recommend, however, a careful perusal of Mr Gulliver's note, commencing at page 28.

The author now enters upon a consideration of the cell germ, encased nucleus, or cytoblast of Schleiden. The theory of the

cellular origin of all tissues, animal as well as vegetable, which the researches of Schleiden, Schwann, Valentin, and others, have developed, appears now to have been generally received amongst scientific observers. Undoubtedly it clears up a host of phenomena which were previously obscure; and although far from complete—although demonstrative evidence is still wanting, that many animal tissues were at any time wholly constituted of cells—it renders the assumption of this in the highest degree probable. The terms nucleolus, nucleus, and cell, therefore, have now become common expressions amongst anatomists, physiologists, and pathologists; and a knowledge of their mode of production, their mutual relation to each other, the mode in which they become developed into all the textures of the body, and the forms they assume in certain morbid structures, must henceforth be considered as forming a portion of that knowledge which every enlightened medical practitioner ought to possess. It is in these particulars that we must acknowledge the superiority of the Germans to ourselves—a superiority, we are afraid, which will continue until the medical professors and teachers in this country consent not only to describe, but *demonstrate* these things; and instead of coldly looking at all attempts to introduce the microscope as a means of research, are themselves obliged to employ it, and stimulate the exertions of the student by their own example.

The general formation of cells may be shortly described as follows. There is first a *granular fluid;* secondly, a *nucleus* is formed, which some have described as being made of an aggregation of these granules, and others as a corpuscle of a white, or dull red colour, enclosing a granule or *nucleolus*. Upon this nucleus arises a transparent vesicle, at first somewhat resembling the appearance of a watch glass rising from the dial of a watch, and then the whole constitutes a *nucleated cell*. The walls of the cell now enlarge. If several lie together, they assume a polyhedral form from the lateral pressure they receive, as in the pith of some plants; fibres are formed, from their becoming elongated, and splitting up; tubes, from the partitions being absorbed, whilst the walls remain; and more solid textures, from woody or calcareous depositions taking place on their internal walls. After a time, the nucleus disappears, leaving a *non-nucleated cell;* but it sometimes remains permanently. It must not be supposed, however, that every granular fluid gives rise to a nucleus; every nucleus to a cell; or that every cell assists in forming other textures. Granules, nuclei, and cells, often remain permanently, thus constituting the basis of several animal fluids or textures. Different observers have considered this or that corpuscle to be a nucleus or a cell, according to their ideas of its formation and state of development. Thus, Schwann regards the red particles

of the blood, the lymph, pus, and mucous globules, as isolated cells. Vogel and Henle, on the other hand, consider the pus globule as a nucleus; and Valentin holds the same opinion with regard to the blood globule. Dr Martin Barry has even carried this doctrine so far as to affirm, that the cells from which all the animal tissues are derived, are formed *directly* from blood globules.

We have thought it necessary to give this short condensed account of the formation and development of cells, which will, perhaps, enable those who may not have studied the subject to follow us more readily. Let us now return to our author. Dr Gerber informs us, that

"The dimensions of the cell germ are different in different mammals, and under different circumstances in the same mammal (from the $\frac{1}{1\,5\,5}$th to the $\frac{1}{3\,1\,0}$th of a line in diameter); and it bears a general relation to the size of the blood globules of the individual. Its specific gravity is always greater, the older it is, and this only declines when it is again dissolved." Pp. 41, 42.

Mr Gulliver, however, remarks on this statement:—

"In a series of observations which I made on the pus of various mammiferous animals, there did not appear to be any general relation between the size of the pus and that of the blood corpuscle of the same animal; and in the vicugna and paco which have oval red particles, the pus globules presented no peculiarity, being in form and size like those of many other animals." P. 41.

The consideration of granules, nuclei, and cells, naturally leads to a description of those constituents of the body which contain them in their normal state. Hence the author proceeds to treat of chyle, lymph, and blood, which, under the microscope, present different corpuscles, referrible to one or the other of these groups of bodies. We regret that our limits oblige us to pass over this part of the work, which, however, is replete with interest, but at the same time contains numerous statements which are far from having been confirmed, and ought, in our opinion, to be received with extreme caution.

We regard much that has been written on extravasation and exudation as very interesting; and this portion of the work receives additional value from the numerous notes of Mr Gulliver. We shall endeavour to condense the view held concerning inflammation by several eminent German pathologists; and in doing so, are guided not so much from what is stated by the author, as from the private sources of information which we possess on this subject.

They consider that the effusion of serum, coagulable lymph, ("*plastic matter*,") and blood, merely depend upon different degrees of distension which the capillary or intermediary vessels may undergo; in other words, that as the walls of these vessels become more thin, they allow denser matters to pass through

them. Thus the thin or serous portion of the blood will traverse the vessels under circumstances which will not admit of an effusion of coagulable lymph; and this again may be exuded when the blood globules, from their size, are retained in the vessels. In short, according to this view, the vessels act as filters, which permit some matters to pass through them, whilst others are retained according as their coats are more or less thick. That other causes, however, come into operation, appears evident to us, on taking into consideration that numerous vessels may be greatly distended by simple congestion, and no effusion of lymph or blood occur; whilst in other cases, where the distension does not appear by any means so great, false membrane is thrown out in great quantities. The general doctrine which prevails on this subject amongst British pathologists—and we consider it the true one—is, that this distension of the capillaries is invariably preceded by some change of a vital nature, either in the blood itself, or in the minute vessels, and sometimes probably in both.[1] The result is, a transudation of the fluid or more solid constituents of the blood.

When fibrine becomes effused, as the result of inflammation, into the living textures, it appears to possess a tendency to assume a finely-granular structure. Globules are formed, which have received the name of globules of inflammation or exudation corpuscles; and as these become more and more aggregated together and developed, the effused matter becomes more dense. In the exudations thrown out in closed cavities, vessels now appear, and form a capillary net-work, similar to those found in the intestinal villi, which are indispensable to the repair of the injury and absorption of matters effused.

"When, for instance, inflammation of the shut sacs of the body (the serous and synovial membranes) has exceeded the limits at which resolution is possible, or when it has destroyed all capacity in the part to perform its function, then is this termination, by an exudation of coagulable lymph, the most favourable that can occur, nay, it is the only one that renders a recovery (which, however, is only relative) possible. An organizable deposit has become necessary to the restoration of the part,—and such a deposit is coagulable lymph, projecting into the affected cavity, increase the extent of absorbing surface, become vicarious of the functions of the now incompetent membrane, and remove immediately the serum which has become free, in consequence of the coagulation of the exudation." Pp. 88, 89.

The following is the author's account of union by the first intention and formation of pus:—

"Simple incised wounds, made with a clean sharp instrument, heal, by what is called the first intention, in the course of a few days, almost of a few hours, when the wounded surfaces can be brought into apposition without dragging, and the reparative process is suffered to go on undisturbed. In

[1] The best article on this subject that we are acquainted with, is by Dr Alison, in the first volume of Dr Tweedie's Library of Medicine.

this case, the fibrine of the extravasated blood fills up all the smaller accidental hollows in the depth of the wound; cytoblasts are then produced. These are transformed into cells, which acquire a final organization in consonance with that of the parts injured; and the superficies of the wound is repaired. The adjacent edges are united by means of a secondarily produced, firm tissue, universally known by the name of *cicatrix*."

"Wounds with a loss of substance, gaping sabre wounds, gun-shot, and other wounds, where a certain degree of bruising attends the solution of continuity,—wounds, too, that have been filled with foreign substances, dirt, &c., which must be got rid of before they will *cicatrize*,—all heal by *suppuration*. The process in these cases is as follows:—

"After having bled to a greater or less extent, the wound becomes stiff, and painful, and dry; an exudation of the liquor sanguinis is then established from the entire extent of surface, and this goes on incessantly till the injury is repaired. The fibrine, as it coagulates on the raw surface, forms *exudation globules*, or cytoblasts, many of which cohere in layers, and compose the *false membrane* that finally invests the entire superficies of the sore. The layers of globules in most immediate contact with the living tissues, become *cells*, which then undergo further transformation, in accordance with the nature of the structure to be reproduced. Those layers of globules, again, which are most remote from the living parts, become *pus globules*, and these, mingled with a small quantity of serum, compose true or laudable pus, which, on the one hand, indues and protects the focus of organization, separating the *granulating surface*, as the surface of a wound in process of repair by suppuration is called, from external agencies,—and on the other, forms the soft, mild medium, in which reproduction goes on from the more remote parts towards the centre, and by which foreign substances are detached and removed from the sore."

"*Pus*.—The exudation globules, which lie beyond the vivifying influence of the surface of the wound, and exposed to the action of external agencies, cannot be expected long to retain their vitality; these globules, therefore, forsaken, as it were, by the organizing principle, begin to degenerate in their organization, and to suffer changes in their chemical constitution; whilst those that continue in immediate contact with the living structures of the body advance in their organization; those globules that are cast loose then die,—*mors vitæ origo*.

"On the exudation globules that are free a number of delicate lines, radiating from a centre, are first perceived, which divide their peripheries into from six to eight (seldom more) segments; these lines become more and more distinct, and the capsule appears as if it were torn or cleft, but without separation of parts; in many globules, too, the nucleus now appears to incline to fall into from two to four pieces; the originally reddish-yellow colour of the globules fades, the segments of the envelope and the divisions of the nucleus, which had been linear and sharp in appearance, become rounded off, till they appear like aggregated granules, whilst the pus, now completely formed, acquires a greenish-yellow hue." Pp. 89—91.

It will be observed, that the author ascribes the origin of the pus globule to degenerated exudation corpuscles. In this we think him to be correct, as our own observations have led us to a similar conclusion. But the changes he describes as occurring in the exudation globule itself, preparatory to the transformation into pus, have escaped our notice.

The author now enters into a consideration of the chemical analysis of healthy or laudable pus. This he sometimes calls *reproductive pus*, "and as the corpuscles which compose it generally consist of seven granules, it might be designated the *seven-*

granular pus." He then speaks of the different kinds of false or unhealthy pus. The following are his observations on the fluid of ulcers. (*Ichor.*)

"In the discharge of sores, true pus corpuscles are only discovered when there are parts of the ulcerated surface upon which healthy exudation and the formation of cytoblasts are proceeding, as means of repairing the breach of continuity. If this be not the case,—if the entire ulcerous surface be in an unhealthy state, then the secreted serum contains ichor corpuscles, with granules in variable quantity; and when the sore is of the phagedenic kind, larger or smaller detached shreds of the structures implicated, in the shape of filaments and fibres, cartilage corpuscles, and the like; occasionally also, oil globules and crystals. This fluid is of very different colours in different cases, and is generally much thinner than good pus. An ill-conditioned or unhealing sore is a wound with a surface incapable of throwing out or organizing plastic lymph, bedewed with an altered serous fluid—*ichor*, in technical language—destructive of any exudation that may be produced. This ichor seems even to irritate and cut farther into the tender surface of the wound, and to cause the destruction of the more superficial vessels, which leads to the discharge of small quantities of blood, which is immediately discoloured, and so much changed, that the liquor sanguinis rarely coagulates save in granules, and the blood globules appear variously puffed up or crumpled together, superficially corroded or broken down into irregular pieces. The blood globules, thus altered, are denominated *ichor corpuscles;* they are very commonly covered with granules loosely or more intimately attached to them; they are probably better studied in the discharge of glanders than in any other, this consisting in great part of them. When the unhealthy surface of a sore is turned into a fresh wound, either by the removal of the surface with the knife, or the destruction of this, together with the discharge, by means of the actual or potential cautery, under otherwise favourable circumstances, reproductive suppuration is established." Pp. 105—107.

The following is his account of the process of granulation and cicatrization.

"With regard to the mode in which exudation takes place, the plastic lymph coagulates as fast as it is thrown out, and in a few minutes composes a layer of unorganized vitreous substance, investing the entire surface of the wound. Half an hour later, this is found transformed into an imperfect epithelium,—the wound appears covered with a delicate membrane, made up of exudation corpuscles, arranged side by side, and under the microscope appearing tasselated, or like a piece of pavement formed of polygonal pieces; the nuclei of the several corpuscles are also now perceived, and the new membrane acquires a passing resemblance to the appearances seen in fig. 47. This most immediate layer now becomes transiently true epithelium, whilst the nucleus, at the same time, and under circumstances with the precise nature of which I am not yet fully acquainted, undergoes three different alterations, viz. 1*st*, it becomes granulated; or, 2*d*, a clear vesicle is formed on the cytoblast; or, 3*d*, a nucleolus appears in the nucleus, rounded cells are formed about the exudation corpuscles, and the exudation or cytoblast coverings become cell-coverings, which, were they permanent, would compose a true epithelium. The formation arrived at this stage is already an integral part of the body, where it is evolved, being included within the common boundary of the organism, and participating in its general states and operations. The cytoblasts which are remote from the surface of the wound, in the mean time retrograde; their enveloping membranes crack, and the masses into which they divide become granules, the nucleus farther splits into from two to four granules, and the cytoblast membrane is transformed to a pus membrane, which is now foreign, and felt to be foreign,

to the organism. The pus globules separate and become diffused through the serum; they fall at length into granules, and are gradually removed from the wound, whilst the general mass of pus included within it, from the granulating surface outwards, exhibits the various transition stages from the perfect exudation to the ripe pus globule."

"The cellular layer, which never covers the surface of the wound, as a living organized portion of the body, is competent to carry on the process of transudation and reparation; over and in contact with it a new layer of exudation globules is thrown out, which, undergoing the transformations just described, come in their turn to form a membraniform cellular layer, over which a layer of pus corpuscles is deposited as before, and so the process goes on."

"In the successive evolutions of these cellular laminæ, the newly-formed unite with the older cells to form a continuous cellular substance, which is by and bye converted into various kinds of cicatrix, cellular substance, bone, tendon, &c.; or, at all events, a matter which replaces cellular tissue, bone, tendon, skin, &c." Pp. 112—114.

Our own observations, which have not been few in connection with the formation of pus, granulations, &c., induce us to place considerable confidence in the author's account of this interesting and important subject. They will probably be regarded as strange and fanciful by some of our readers; yet many of the facts alluded to, are susceptible of ready demonstration. The extracts we have made evince with what zeal the process of inflammation has been examined by German anatomists, and how our knowledge with respect to it has been advanced by means of the microscope. Indeed, these observations, if true, must greatly revolutionize the existing ideas on this subject, and we cannot too earnestly impress on all teachers of medicine and surgery in this country, the necessity of paying proper attention to them, and personally examining into their truth.

The analysis of this work will be continued in our next number.

The Fourth Fasciculus of Anatomical Drawings, selected from the Collection of Morbid Anatomy in the Army Medical Museum of Chatham. Drawn on Stone, by GEORGE H. FORD. Folio. London, 1841.

The Fourth Fasciculus of Anatomical Drawings, from the collection of the Army Medical Museum, is now before us; and we must say, that a more beautiful, and, as far as it extends, a more useful series of illustrations, we have never seen. If we are not much mistaken, these are the best specimens of anatomical drawings on stone which have ever appeared in this country, for boldness and accuracy of outline, management of light and shade, and successful imitation of texture. They exhibit none of that flatness of surface, and chalky appearance, which generally characterize lithographic prints. Colour, the usual remedy in such

cases, has, in the drawings before us, been dispensed with. Anatomical colouring, from the peculiar nature of its subjects, is seldom correctly executed, and can in no case supply what must always be of primary importance to the anatomist—correctness of outline.

We beg to direct attention more particularly to figs. 3 and 6 Plate III.; fig. 1, Plate IV., &c.

We fully coincide with the judicious suggestion of the Director-General as to the selection of the subjects of the present fasciculus.

Illustrations of diseased structures, when judiciously selected, and limited, as in the present instance, constitute a most important form of publication. When the objects are arranged in such a series, they impress the mind with methodical knowledge, instead of a mass of instances, and leave upon it a distinct conception of the whole subject, instead of a vague apprehension. Nothing can be more erroneous, in fact, than the idea, that the numbers in the catalogue of a collection of illustrations of morbid structures, drawings, or proportions, must extend to thousands, before it can be useful to the profession. It is a much more difficult thing, and a much surer test of real knowledge of a subject, to be able to select, than to collect illustrations.

The present fasciculus contains illustrations of diseases of the heart, aorta, and vessels of the first order.

Plates I. and II. are devoted to illustrations of the various forms effused lymph assumes in pericarditis. Plates III. and IV. exhibit well-selected examples of valvular derangements—osseous deposits—excrescences and ruptures of these parts. The other plates present the varieties of aneurism of the heart itself, and of the aorta.

The only drawing in the fasciculus showing the changes produced by disease and injury in the vessels of the second order, is one of lymph in the femoral vein, taken from a case of phlegmasia dolens.

As a good series of illustrations of such changes is at present a desideratum, and as the Fort Pitt collection contains many good examples of such lesions, we trust that of some of the future fasciculi with which we hope the profession will yet be favoured, such a series will form a part.

It is, we must say, a gratifying circumstance, and a proof of the able and energetic management of that department of the public service, that the medical profession may look forward with confidence to a continuance of that zeal in the advancement of professional science, which did so much for medicine and for humanity, amidst the danger and privations of service in the last war, and has not ceased to exert itself in these piping times of peace.

Principles of Surgery. *By* JAMES SYME, F.R.S.E., *Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen.* Third edition, enlarged and illustrated with sixty-four Woodcuts and fourteen Plates. 8vo, pp. 508. London, 1842.

A new and illustrated edition of the admirable work of Professor Syme having appeared, we take the earliest opportunity of bringing it under the notice of our readers. The letter-press has been very carefully revised, and when occasion required, amplified and enlarged so as to include the latest doctrines and facts of surgical pathology and practice. The lithographic illustrations, by Mr Leith of Edinburgh, printed on India paper, are most beautiful specimens of engraving on stone; indeed, than some of them, nothing could be finer in this department of art. The woodcuts are, generally speaking, very good; but they do not seem to have had full justice done to them in the printing; and are sometimes not well set in the page. Unquestionably the book would have been more beautiful, and had a far higher air of finish and elegance, had the paper been of finer quality, and the ink better,—so as to be in keeping with the lithographic illustrations.

With the opinions and practice of Mr Syme, as inculcated in his writings and clinical lectures, and exhibited in his hospital practice, very many of our readers must be acquainted; but for the satisfaction of those who have not yet procured the work before us, we may be allowed to make some extracts. To attempt an analysis of a work already so succinct and doctrinal, would be vain:—and all we can do is to give a few quotations, and earnestly recommend the book itself, which, from the clearness of its diction, excellent arrangement, and the eminence of its author, we need hardly say, should find a place on the shelves of every practitioner.

The treatment of *ulcers not tending to heal*, is spoken of under three heads, viz., 1. Ulcers which are prevented from healing by defect of action; 2. By excess of action; 3. By peculiarity of action. We quote the remarks upon the treatment of the first class.

"*Ulcers prevented from healing by defect of action.*—The defect of action has been thought to depend sometimes upon a real want of power, and at others upon a want of disposition to exert the power that exists. The ulcers of this kind have accordingly been divided into weak, and indolent or callous, which exhibit different characters, and require different treatment.

"In weak ulcers the surface is generally higher than that of the surrounding skin, and exhibits large flabby granulations, which are either of a dark

colour, like that of venous blood, or pale and œdematous. The edge is smooth and flat, or gently rounded; the discharge thin, watery, and generally profuse; the pain usually inconsiderable or altogether absent. The parts surrounding and subjacent, constituting what is called the stool or base of the ulcer, are soft and free from any indurating effusion. The cicatrix forms round the margin, and is at first generally elevated above the proper level, to which it usually descends afterwards, owing to the contraction that takes place subsequently to its completion.

"This kind of ulcer occurs in parts which possess weak powers of action, either on their own account or on that of the system. The general weakness is most frequently observed in children; but may be induced at any age, by deficient nourishment, an unwholesome atmosphere, &c. The local weakness may depend on obstruction of the blood or nervous energy, the cause which occasioned the ulcer, or simply on the duration of the healing process. With regard to the second of these it may be stated, that wherever the solution of continuity is effected by means which injure the parts concerned, as by lacerating, bruising, or burning them, it displays the characters of a weak ulcer; and as to the last, it is sufficient to observe, that every ulcer tends to become defective in action during the process of cure; so that, if considerable in size, it is sure, sooner or later, to display the features indicative of this condition.

"The treatment of weak ulcers consists in employing pressure, together with stimulating and astringent applications locally; and, if necessary, strengthening the system by the administration of wine, bark, bitters, and nourishing diet. Of the local applications, ointments used to be most employed, but the preference is now generally given to various metallic solutions, such as those of the sulphate of zinc, acetate of lead, and sulphate of copper, in the proportion of from one to three grains to the ounce. It seems probable that the moist nature of these applications is of more consequence, in producing the effect desired, than the substances dissolved in them, since water alone answers very well for the purpose. These washes, as they are called, ought to be varied occasionally, as habit lessens their effect; and with the same view, a poultice ought to be applied from time to time. Pressure is always useful, and ought to be exerted by proper bandages. Several folds of lint moistened with the wash should be laid over the sore; and thin sheet-lead, cut to the size of it and laid over the lint, is also very advantageous. Between the lint and bandage it is proper to interpose a piece of oiled silk, to prevent the lotion from soaking away and leaving the sore dry.

"The indolent or callous ulcer is distinguished by a smooth surface, generally depressed, and having no appearance of granulations, of various colours, brown, grey, or white, and looking as if varnished; a viscid, tenacious, fetid discharge; a circular or oval figure, with little irregularity; and thick white edges, seeming as if composed of accumulated cuticle. There is no circumscribed hardness in the immediate neighbourhood of the ulcer; but there is always considerable diffused swelling of the limb in which it is seated. The swelling is not soft and yielding like that of common œdema, but firm and incompressible. The pain is very variable. There is no appearance of cicatrix, so long as the sore retains its indolent characters.

"Ulcers of this description are confined almost exclusively to the legs of people advanced beyond middle age, and constitute a very troublesome subject of surgical practice, as they are very apt to recur after being healed. Some people, partly from the fear of injuring the system by suppressing a long-continued discharge, and partly from the despair of effecting a permanent cure, bestow little care on the treatment of these complaints; but this is wrong, since the most unpromising cases, under proper management, are often remedied; and there is hardly any disease which interferes more seriously with the patient's comfort, or unfits him more for the active duties of life. It is chiefly met with in the labouring poor, and often produces

the greatest misery, by impeding or altogether preventing the exertions which are required for maintaining the patient and his family.

"The treatment generally thought the most useful, is rest in the horizontal posture, conjoined with pressure. The merit of fully establishing the advantage of pressure, is due to Messrs Whately and Baynton, the former of whom recommended a calico or flannel bandage, to be tightly applied from the toes upwards to the knee; and the latter, in addition to this means, to make the compression more effectual, employed slips of adhesive plaster, an inch or two broad, and long enough not only to encircle the limb, but to cross each other far enough to obtain a firm hold when drawn round the leg, and across the sore. The limb having been shaved, a slip of plaster is applied an inch or two below the sore; then another a little farther up, so as to leave a third of the former one exposed; then another in the same way; and so on, until not only the ulcer, but an inch of the skin above it is covered. Lastly, a cotton roller, three inches broad and five yards long, is applied from the toes upwards. Pledgets of lint, covered with simple ointment, or compresses of tow, are often interposed between the plasters and bandage; but this is unnecessary. If the patient complains of pain, the dressing may be soaked with cold water. Unless the discharge is profuse, the sore need not be dressed oftener than once in two days. Under this treatment the swelling of the limb subsides,—the callous edges speedily disappear,—the surface of the ulcer granulates, discharges a purulent secretion, and cicatrizes as an ordinary healing sore. The good effects of this treatment are usually ascribed to its stimulating the actions, which are supposed to be in an indolent state, and thus exciting a healing action in the sore. But the true explanation probably is, that it allows the healing action to proceed, by inducing an absorption of the swelling which occupies the limb, and which, though of secondary origin, inasmuch as it proceeds from the continued irritation of the ulcer, when once established, must oppose the contraction requisite for the process of cicatrization.

"I have accordingly found that the application of a large blister, covering the sore and a considerable part of the limb, greatly hastens the cure, and frequently proves sufficient for its completion, without the use of any other means than moist dressings applied afterwards. The immediate effect of this practice, is removal of the swelling,—the thick callous edges disappear,—the surface of the ulcer comes to be on a level with the surrounding skin—granulates and cicatrizes. In favour of this treatment, I may mention, that it is more speedy and lasting in its effects than the strapping process—and much more economical, which is a point of great importance in treating the poor people who usually suffer from the disease—since the expense of strapping and bandaging their limbs very often prevents the treatment from being undertaken." Pp. 49—52.

Regarding *Hospital Gangrene*, Mr Syme remarks:

"In the forms of this affection which I am accustomed to see, the first sign of its commencement is the appearance of one or more small superficial circular excavations, looking as if scooped out with a nail in the surface of the sore. They have a yellow or greyish-yellow colour, and are devoid of granulations. Rapidly extending and coalescing, they entirely alter the aspect of the ulcer, which, partly from swelling of its edges, and also from phagedenic action, at the same time becomes much increased in extent. A soft spongy slough of a dirty white colour, next presents itself, generally extending over the whole surface, but varying in its thickness. While these local changes are in progress, and apparently keeping pace with them, a general derangement of the patient's system is observed. He acquires a sickly yellow aspect, loses his sleep and appetite, and has an extremely quick pulse, together with the foul tongue, and all the other symptoms of feverish disturbance. By-and-by, in the course of a week or ten days, the

state of matters begins to improve; the sore gradually regains its former characters, and, though often very much increased in size, usually heals more quickly than might be expected, the general health undergoing a correspondent change. After-trying a great variety of treatment without any sensible benefit, I have for some years past come to regard the attack as one that should be trusted very much to spontaneous recovery. It is more troublesome than dangerous; even in the cases of compound fracture and amputation, hardly, if ever, leading to the loss of limb or life, but merely protracting the cure. A poultice seems the best dressing that can be applied until the sloughs begin to separate; and the only internal remedies that appear useful, are laxatives in the early stage, to regulate the bowels, and a moderate allowance of wine in the more advanced period of the complaint." Pp. 53, 54.

Mr Syme thus briefly notices the method contrived by M. Amussat for *obstructing large arteries*, "which generally succeeds in the lower animals, and has also been executed with success on the human subject."

"It consists in seizing the bare coats of the artery transversely with two pair of forceps, and then separating the two instruments from each other, so as to rupture the internal coats, and throw them into folds. The effect of this procedure is interesting in respect to the pathology of the arteries, but will not probably be preferred in practice to that of the ligature." P. 86.

Mr Syme's experiments regarding the *reproduction of bone*, have always seemed to us quite conclusively to prove, that the periosteum can of itself form new bone, without assistance from the old. We find a long extract in the work before us, from the memoir which the author submitted to the Royal Society of Edinburgh, and which was published in their Transactions for 1837. A portion of it we subjoin.

"A girl, twelve years of age, strained her ankle in the month of March 1835. Inflammation followed, extending up to the knee, and attended with violent fever. She was brought to the hospital, and placed under my care. Incisions were soon afterwards made to evacuate a large collection of matter which had formed in the leg; and the bone being found dead, while the patient's strength was rapidly giving way, I amputated the limb above the knee, five weeks after the injury had been received. The girl recovered, and is now well. In examining the limb to ascertain the extent to which the bone had died, I found that it was partially surrounded by the commencement of a new one. The shell had already acquired considerable firmness at some parts, but was not equally thick throughout, and did not seem fixed to the ends of the old shaft. This observation led to a very careful dissection of the parts concerned; and they are now before the Society. It will be seen that the tibia had died very nearly from end to end, and that the new shell inclosing it has been formed in the periosteum. The new osseous substance may be observed at some parts in the form of small distinct scales. At other parts it looked as if it had originally consisted of separate portions, and been composed by their union. The periosteum connecting these portions to each other and to the extremities of the bone, was not thickened beyond its natural condition; and where it covered the posterior surface of the tibia, though quite detached from the old bone, had not suffered any farther change.

"There is here, then, an instance of a bone dying suddenly in consequence of acute inflammation, without any thickening having previously formed in

its neighbourhood, and nevertheless succeeded by the production of a new osseous shell, which evidently could not proceed from the old bone, and no less evidently depended upon an ossific process resident in the periosteum.

"As nature is not capricious or variable in her proceedings, I regard this case as sufficient of itself, without any farther evidence, to establish the ossific power of the periosteum. But, with the view of making the matter still more clear, I performed the following experiments. I exposed the radius of a dog, and removed an inch and three-quarters of it, together with the periosteum. At the same time I exposed the radius of the other leg, and removed a corresponding portion *without* the periosteum, which was carefully detached from it, and left quite entire, except where slit open in front. Six weeks afterwards the dog was killed, and the bones examined. In the one, from which a portion had been taken together with the periosteum, the extremities were found extended towards each other in a conical form, with a great deficiency of bone between them, and in its place merely a small band of tough ligamentous texture. In the other, where the periosteum had been allowed to remain, there was a compact mass of bone not only occupying the space left by the portion removed, but rather exceeding it in thickness. This experiment when repeated, afforded the same results.

"I next exposed the radius of another dog, and separated the periosteum from the bone, as in the former experiment; but then, instead of cutting out the denuded bone, inserted a thin plate of metal between it and the periosteum. The edges of the membrane, and then those of the skin, were sewed together, and the wound healed kindly. At the end of six weeks I dissected the limb, and found a deposition of osseous substance in the periosteum, forming a bony plate exterior to the metal, and not connected with the old bone except by the membrane.

"I lastly exposed the radius of a dog, and cut away the periosteum to the same extent that it had been merely detached in the experiment just mentioned, and surrounded the denuded bone with a piece of metal. At the end of six weeks I found a thick tough capsule formed, enclosing the metallic plate, but having no osseous substance in it." Pp. 91—93.

Hysterical young women are subject to painful *nervous affections of the joints*, simulating disease involving alteration of the structure of the articulation; which, from an error in diagnosis, are often treated by counter-irritation, instead of exercising the joints, and administering tonics. The spine, knee, hip, ankle, and wrist joints, Mr Syme says, are the most common seats of this troublesome affection.

"In respect to its diagnosis, the absence of swelling, or any other symptom except pain, together with the time of life, and general condition of the patient, constitute the best marks of distinction from structural derangements. Sir B. Brodie, to whom the profession are much indebted for the attention which he has directed to this form of nervous disease, considers as one of the best characters for its recognition, the sensibility of the patient to impressions on the surface of the joint that cannot possibly affect the condition of the articulation, pinching the skin being equally effectual for causing wincing, as moving the limb, or pressing the articular surfaces against each other. The whole system is usually observed to be in a highly sensitive excitable state, but sometimes presents all the characters of perfect health. The uneasy feelings, though frequently remaining months or years, generally commence and disappear suddenly; whence empiricism is afforded a good field, which has been diligently cultivated." P. 237.

We quote the whole of the Professor's observations on the

excision of joints, a valuable operation, which he had the merit of bringing into repute among British surgeons, at a time when it was little known, and rarely practised in this country.

"*Excision of the Joints.*—It has been explained in regard to the treatment of caries, that the only remedy for this diseased action, is removal of the affected portion of the bone. Amputation has until lately been regarded as almost the only means of relief from carious joints. But it is now ascertained by experience, that, on some occasions, the limb may be saved by cutting out the articulation. The softened, discoloured, and ulcerated integuments, the thickened and indurated cellular substance, and the gelatinous synovial membrane, are found to afford no serious obstacle to recovery, provided the whole of the bone, so far as it is actually carious, be taken away. The operation requisite for this purpose, though severe, is not more dangerous than amputation, because the joint, previous to its performance, has been opened by the disease; the whole of the articulating tissues which are apt to suffer violent inflammation when irritated, are either previously destroyed or removed; the great blood-vessels and nerves are not interfered with; and the patient is not subjected to the shock which is caused by taking away a limb.

"As to the joints which may be subjected to this operation, it is evident that the extent to which the acetabulum is almost always affected in the hip disease, forbids any attempt at excision. Though experience has not yet fully decided whether the limbs that might be preserved by cutting out the knee and ankle joints, would be preferable to the artificial substitutes which may be worn in their stead, it seems pretty well ascertained that they would not. The wrist also, from the number of bones, and complexity of articulations entering into its formation, together with the numerous tendons, arteries, and nerves passing over it, does not seem to be within reach of the operation. But the elbow and shoulder joints, while their structure and situation are most favourable for excision, hold out the greatest inducements to effect their removal without performing amputation. In all ranks and circumstances of life, the use of the hand is of great consequence, and though the elbow or shoulder were to remain perfectly stiff and motionless, yet, if the hand could be preserved entire and serviceable, by excision of these joints, it would be infinitely preferable to do so, instead of taking away the limb. But it has been proved by numerous facts, that while the joints beyond the disease remain as useful as ever, the one which has undergone the operation, regains such a degree of mobility and subjection to the action of its muscles, as sometimes to render it hardly distinguishable from a sound one, and in general prevents it from at all impeding the use of the arm by its stiffness. There is no new joint, strictly speaking, formed, but a strong fibrous substance unites the extremities of the bones, and by its flexibility allows them to move within proper bounds; while the muscles cut across in the operation, obtain new attachments, so as to perform their usual office.

"*Shoulder Joint.* Different methods have been followed in cutting out the shoulder joint, but it will be sufficient to describe the one which appears to be the most convenient. The patient being seated on a chair, and properly supported, the surgeon introduces a straight, sharp-pointed knife under the acromion, thrusts it down to the head of the humerus, and then cuts perpendicularly, close upon the bone, nearly as far as the attachment of the deltoid. He next carries the knife backwards and upwards, from the inferior extremity of the first incision, so as to divide the external part of this muscle, and having thus formed a flap, he dissects it from the subjacent parts, so as to expose the articulation. In order to detach the head of the humerus, he cuts transversely into the joint, introduces the fore-finger of his left hand, and using it as a guide for the knife, separates the attachments of the muscles, which are inserted into the greater and smaller tuberosities.

The arm being then drawn across the breast, the head of the bone protrudes through the wound, and being grasped in the hand, may be readily sawn off. The glenoid cavity should next be examined, and taken away as far as seems necessary. The whole of the surface covered with cartilage should always be removed, and in general this will be sufficient; but sometimes the caries extends farther into the bone, and in this case must be carefully followed out by the pliers or gouge.

"The only artery cut during the operation that in general requires a ligature, is the posterior circumflex. The edges of the wound should be stitched together, and some light dressing having been applied, the arm ought to be supported by a spica bandage and sling.

"The patient need not be confined to bed beyond a day or two, or so long as the fever excited by the operation continues; and when the wound begins to heal, he must gently exercise the limb to prevent it from becoming stiff.

"The credit of performing this operation for the first time, has been ascribed to Mr White of Manchester (1769); but there seems good reason for believing that the case being necrosis, not caries, he merely removed part of the exfoliation before it had become detached from the living bone. The patient was a boy fourteen years of age, who 'had been suddenly seized about a fortnight before with a violent inflammation in his left shoulder, which threatened a mortification, but at last terminated in a large abscess, which was opened with a lancet a few days before his admission.' Through this opening, and another that had formed spontaneously under the acromion process, the *os humeri* could be felt and seen 'totally divested of its bursal ligament.'

"Mr Whyte made an incision from the acromion process half-way down the arm, protruded the head of the bone through the opening thus obtained, and sawed it off. At the end of two months, he found that a large piece of the remaining bone had become loose, and easily removed it with a pair of forceps. The patient was perfectly cured at the end of four months from the operation. The arm was then not quite an inch shorter than the other, and he had the perfect use of it. In a work published some years ago, I expressed my persuasion that this was not a case of caries, as it had generally been regarded, but one of acute necrosis; and the following very curious companion to it at a more advanced stage, seems strongly corroborative of that opinion.

"Thomas Cairns, aged 13, from Saline, recommended by Mr Craig of Ratho, was admitted into the Infirmary on the 30th of June, on account of a great enlargement of the right shoulder, attended with pain and discharge of matter. It was stated that ten months before he had fallen from a wall about four feet high among loose stones, and afterwards had been pretty severely handled by a bone-setter, who alleged that the humerus was broken near the joint. Inflammation and suppuration followed, openings for the discharge of matter took place at various parts, the joint became stiff, and the patient's strength declined. In these circumstances, he was sent to town to be under my care.

"As it was impossible to obtain any satisfactory information in regard to the condition of the joint by introducing a probe, I enlarged the sinus that led most directly towards it sufficiently to admit my finger, with the point of which the head of the bone was felt bare and smooth. The extreme firmness of the surrounding parts prevented a more free examination, but the information thus gained, together with the history of the case, convinced me that a portion of the bone was dead and detached. I therefore extended upwards the incision already made, finding it necessary to use for this purpose both the knife and cutting-pliers, and then ascertained that the exfoliation lay loose in a bony case. Being unwilling to remove any of the new formed osseous substance which was destined to take the place of the old bone, I forcibly dilated the edges of the aperture until the shell gave way

sufficiently to permit the extraction of the sequestrum, which was then easily effected. After the principal portion here represented was removed, some small pieces were found lying in the cavity, which proved to be fragments of the dense plate that had formed the convex surface of the head of the bone. The glenoid cavity of the scapula was divested of cartilage, but covered with a smooth firm velvet-like lining of granulation. Recovery was delayed by unhealthy action of the sore, which assumed a phagedenic, and afterwards a sloughing character, but was so far completed on the 7th of September that the boy returned home with an arm not perceptibly shortened, and, though still stiff at the shoulder, nearly as useful as ever. I saw the patient lately, grown up to be a strong active man.

"In 1826, I operated on a shoulder-joint which had been diseased for upwards of seven years, and had reduced the patient, a female between 30 and 40 years of age, to the greatest degree of exhaustion. The head of the humerus was completely excavated and carious, and presented a most favourable opportunity for excision. Recovery was soon completed, and for many years afterwards, until she died of some other complaint, the poor woman was enabled to lead an active industrious life, with the full use of her arm for all ordinary employments. The success of this case rendered me sanguine for the future; but I regret to say that results so satisfactory bear a small proportion to those in which, from extensive affection of the scapula, the operation proves abortive; and wherever there is ground for suspecting the existence of this obstacle, from the situation of sinuses, or the information obtained by probing, amputation ought to be preferred.

"*Elbow-Joint.* The best mode of performing the excision of the elbow-joint is that which was originally contrived and practised by Moreau. The patient should lie with his face downwards, so as to present the posterior surface of the joint. The surgeon, using the same kind of knife which was recommended for the former operation, makes a transverse incision into the joint, close above the olecranon, and extending from the inner edge of this process to the external tuberosity of the humerus. It is necessary in doing this to be careful to avoid the ulnar nerve, which lies close upon the inner side of the olecranon, and the safest plan is to thrust down the knife perpendicularly into the joint, with its back directed towards the nerve. At each extremity of the transverse cut thus made, the surgeon next makes an incision about an inch and a half long, both upwards and downwards, in the long direction of the limb, so as to form two square flaps, and give the form of the wound a resemblance to the letter H. These flaps being detached from the parts below them, the olecranon may be easily removed by the saw or pliers, after which no difficulty will be experienced in cutting the lateral ligaments of the joint, protruding the extremity of the humerus, and sawing it off through the tuberosities. Lower than this would not be sufficient for removing the whole of the cartilaginous surface, and the caries very rarely extends higher up. The head of the radius may next be cut away with the pliers; and then nothing remains to be done but the separation of the portion of the sigmoid cavity of the ulna that was left after the removal of the olecranon, which may now be readily effected by the pliers. It might be thought better to take away all of the ulna that required excision at once, but the attachment of the *brachiæus internus* to the coronoid process renders this very difficult, especially if it is attempted before the free space afforded by the removal of the other bones is obtained. After the olecranon and the extremities of the humerus and radius are detached, it is easy to cut out with the pliers any more of the ulna that may be required.

"In determining on the extent to which it is necessary to remove the bone, the truly carious part must be carefully distinguished from the rough and thickened state of the neighbouring bone, which depends upon the effusion of new osseous substance in consequence of the disease causing irritation. When we read of the humerus being cut out to the length of *four inches*, it may be safely concluded that this discrimination has not been duly regarded.

"It is seldom necessary to tie any arteries; but if a disposition to bleed should be observed when the operation is finished, the vessels ought to be sought for and secured, as the hemorrhage, when allowed to continue, produces very disagreeable effects, by distending the wound, separating its edges, and causing great irritation. The wounds should be closed with stitches of the interrupted suture, and then a long bandage must be applied in the figure of 8 to support the limb, which should be bent at a right angle, and to prevent the ends of the bones from moving, or pressing injuriously on the soft parts. Rigid cases of iron or wood have been proposed for this purpose, but they are found to be in all respects less convenient than the means just mentioned. The patient, after the first two or three days, will find himself most comfortable in the erect posture; and when the inflammatory tension consequent upon the operation begins to subside, he should gently but diligently exercise the limb so as to preserve the mobility of the elbow.

The cases admitting this operation are much more frequent than those proper for excision of the shoulder-joint. Having adopted the practice when it was almost entirely neglected in this country,—where, indeed, I am not aware of its having been ever previously performed on the living body,—and employed it very extensively as well as successfully, I feel great pleasure in contemplating the benefit that has been derived from its introduction into general use. If the patient, from weakness, seems unable to bear a protracted discharge, or if the bones are found excavated or diseased beyond the limits of the articulating extremities, the limb should be removed." Pp. 240—246.

We must now conclude this patchwork of extracts, having already devoted more space to them than was intended when we took up the volume. We have already expressed our opinion of the work; and from the specimens given, our readers may to a certain extent form a judgment regarding it for themselves.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

ON A CASE OF CONGENITAL IMPERFECTION OF THE VAS DEFERENS AND TESTICLE. BY MR PAGET.

At the inspection of the body of a robust man, aged 71, who had died of acute inflammation of the œsophagus, I observed that he seemed to have but one testicle. By a close examination, the following circumstances relating to the condition of the genital organs were ascertained :—the scrotum was small, and unusually narrow; on its anterior surface there was no trace of raphé, but on its posterior part the raphé of the perinæum was continued for a short distance. The penis hung on the left side of the scrotum, between it and the left thigh, and was of ordinary dimensions. The bladder, prostate gland, and vesiculæ seminales, were healthy and well-formed. The left vesicula was rather smaller than the right; both contained the usual brownish fluid. The right vas deferens and testicle, and the parts connected with them, differed in no respect from those of healthy men. The left vas deferens followed its usual course, from a healthy ejaculatory duct to the internal inguinal ring, where, meeting with the other parts of the spermatic cord, it became larger, and slightly tortuous. After two or three short curves, it terminated nearly opposite the external ring, in a rounded cul-de-sac; it was pervious to its very extremity, and its canal was of the ordinary diameter. The remainder of the spermatic cord passed towards the outer and lower part of the left side of the scrotum, and then expanded into a small flat mass of an oval form, adhering to the surrounding cellular tissue, but clearly defined by its rather closer texture. In this part of the spermatic cord, there was no trace of an obliterated duct; it seemed composed of little more than fine cellular tissue; and in the mass at its extremity, there was neither a cavity, nor any appearance of tubercles, tunica albuginea, nor any other part of a testicle. The left spermatic artery was derived from the left renal, and passed in its usual direction through the inguinal canal, but was very small, and not having been injected, it could not be traced beyond the closed extremity of the vas deferens. The inguinal rings had their usual character. In this case, (of which the preparation is preserved in St Bartholomew's Hospital,) there are presented two very rare congenital defects, viz. an imperfect development of one of the vasa deferentia, and a complete absence of one of the testicles. Of the imperfection of that portion of the vas deferens which should be connected with the testicle, three cases have been accurately described by Hunter,[1] Brognone,[2] and Dr Fisher.[3] In the

[1] On the Glands called Vesiculæ Seminales; Complete Works, vol. iii. p. 23.

[2] Observ. Anat. sur les Vesicules Séminales, p. 625.

[3] On the Functions of the Cerebellum: American Journ. of the Medical Sciences, 1839, vol. iii. p. 352.

first of these, the testicles were normally formed, but both the vasa deferentia terminated abruptly with closed extremities at a short distance from the inguinal rings; in the second, no part of the duct of the right side was developed, except a portion about an inch long, which had its usual connection with the vesicula seminalis; in the third, both testicles were absent, and each of the vasa deferentia ended abruptly in the scrotum.

A few cases also are recorded, in which the vasa deferentia were defective at the part which should be connected with the vesiculæ seminales. To these might be added many and various cases seen in the hermaphrodite series of monsters. Although it is common to find no trace of testicles, at the time of birth, in cases of extensive malformation of the lower part of the body, both in man and animals, yet when the body generally is well developed, no organs seem to be more rarely absent. M. Isidore St Hilaire, after an examination of all the cases in which they were supposed to be congenitally deficient, concludes, that though the occurrence of such a defect is very possible, and even probable, yet "no one of the facts contained in the records of science is at once sufficiently authentic, and sufficiently complete, to prove that this anomaly has ever been met with."[1] And in accordance with this statement, the occurrence of congenital deficiency of one or both of the testicles,—or, at least, of such a deficiency without any other more extensive anomaly,—is generally doubted or denied. In addition to the case which I have detailed, I can find records of only two in which this defect occurred; viz. that already referred to by Dr Fisher, and one in a fœtus described by Mr Thurnam.[2]—Abridged from *Lond. Med. Gazette*, 20th August 1841.

Growth on the Dead Larva of a Gnat, (similar to that recorded by Dr Stilling on Living Frogs). By Mr Thomas Gill.

[In the Monthly Journal for October 1841, p. 746, we gave a full account of Dr Stilling's observations. They were quoted in the Microscopic Journal, and from that periodical we take the following Note by the Editor.]

On the formation of contagious conferva (?) on living frogs, we beg to state, that on referring to the Technological Repository, vol. v., 1829, a similar growth is described and figured by Mr Thomas Gill, which occurred on the body of a dead larva of a gnat. We extract the description, as given by this observer, for comparison:—"The production of transparent tubes, filled at their ends with small spherical bodies, was apparent; which tubes burst as the water gradually dried up, and these spherical bodies swam about in all directions in a lively manner, the ends of the tubes generally remaining empty and quite pellucid; orifices or openings at their ends, through which the spherical bodies had been protruded, being also visible; the extremities of others were filled with these spherical bodies. Others of the tubes also ramified and divided themselves into branches, proceeding from the main stems." The rapid growth of these filaments is particularly referred to by Mr Gill. He further adds, (vol. iv., p. 331,) that the rudiments of these tubes were found adherent to those very recently dead, so that they seem to prey upon them in the manner of other parasites; and instantly upon their death, to commence their work of decomposition.—*Microscopic Journal*, February 1842, p. 186.

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[1] Histoire des Anomalies, t. i. p. 709.

[2] Case of Congenital Malformation of the Genital Apparatus. Medical Gazette, 12th August 1837.

PRACTICE OF PHYSIC AND PATHOLOGY.

ANALYTICAL ACCOUNT OF DR J. SKODA'S RESEARCHES AND RECTIFICATIONS IN THE PRACTICE OF AUSCULTATION AND PERCUSSION. BY DRS DRYSDALE AND RUSSELL.

[In our Number for January we gave a full abstract of a portion of this paper, which appeared in the *Edinburgh Medical and Surgical Journal* for last April. We now present our readers with an abstract of the concluding part of the same paper, contained in the January number of that Journal, and which explains Dr Skoda's views on the auscultation of the heart.]

AUSCULTATION OF THE HEART.

On the Sounds of the Heart.—From a consideration of the differences in the sounds of the heart as regards intensity and character, even in healthy individuals, and the different spots at which the same sound is occasionally capable of being heard, it follows, that the right and left ventricles, the aorta and pulmonary artery, are each independently capable of producing both the sounds heard in the region of the heart. And, first, of the sounds of the *ventricles.* To arrive at a correct notion of the manner in which the *first* normal sound of the heart is produced, it is necessary to enter into a minute examination of the mode in which the chordæ tendineæ are distributed on the tricuspid and mitral valves. We find, then, that from each *columna carnea*, there run several stronger fibres *(cordæ tendineæ)* to the middle of the ventricular surface of the valve, where the greater part of them are inserted. From these stronger fibres, about their middle, and partly also from the *columnæ carneæ*, arise finer fibres, which are inserted near the free edge of the valve; and these again give origin to still more delicate fibres, which are inserted nearer yet into the free margin of the valve. Now, if we pull the *columnæ carneæ* in the direction they have in the heart, it will be seen that only the stronger fibres, and that part of the valve between its attachment and the point where those fibres are inserted, are stretched, and that the rest of the valve, and the smaller bands passing to it, remain relaxed. If, again, we press back in the direction of the auricle any points of this loose part of the valve, so as to stretch the fibres that are inserted into it, a number of pouches are disclosed to view; and on further examination, the whole ventricular surface of the valve, from the free edge to the middle, is found to present similar pouches, which are obviously formed by the peculiar mode in which the tendinous fibres are inserted. By blowing or pouring water on the valve, this loose part is blown up like a sail, and the whole of the pouches are seen at once—the valve presenting, in fact, the appearance of a vast number of small semilunar valves combined into one. During the contraction of the ventricle, the blood, tending to flow back into the auricle, necessarily catches in these pouches, and prevents its own reflux by expanding the loose part of the valve. If the valve deviate from this normal conformation, whether through want of proper proportion between the fibres, or depositions on its free edge, it will not close perfectly, and so be incapable of preventing the reflux of the blood; and a comparison of the observations made on patients with the results of dissection, has shown, that a distinct first normal sound is almost never heard in the ventricle when such is the state of the valve. Hence Dr Skoda concludes that the "first sound which is heard during the systole of the ventricle, arises from the interruption of the stream of blood, from the shutting of the mitral and tricuspid valves, and depends upon the *columnæ carneæ* and *chordæ tendineæ* being thrown into vibration by the sudden closure—by the blood in the ventricle—of the mitral and tricuspid valves; and the reason that the sound is prolonged is, that the vibration continues as long as this state of tension is maintained. The *second* sound heard in the ventricles is generally the

transmitted from the semilunar valves; but in cases where the second sound, while heard very weak, if at all, over the base of the heart, is loud and clear at the apex, it seems necessary to admit the origin of the second sound in the region of the ventricles themselves. Dr Skoda thinks that none of the theories of the sounds of the heart afford a satisfactory explanation of this, and he therefore leaves it quite doubtful; although he thinks it probable that it may originate in the sudden detachment, during the diastole of the ventricle, of the apex of the heart from the parietes of the chest, when it is covered with somewhat viscid effusion.

The cause of the sound heard in the arteries, synchronous with the pulsation, *i.e.* the first sound, is, according to Skoda, the sudden tension of the coats of the vessel.

The second normal sound is heard in the aorta and pulmonary artery, and usually also in the carotid and subclavian. It is obviously produced by the shock of the column of blood against the semilunar valves, which is communicated to the coats, not only of the aorta and pulmonary artery, but also not unfrequently to the carotid and subclavian.

Varieties in the normal sounds.—These sounds may, even in the healthy subject, present a great variety of modifications, which it is unnecessary to enter into here, except to make the practical observation, that the more the sounds have the clapping sharp sound, the greater is the certainty that they are produced by the proper closure of the valves. And if the sound heard over the ventricles is of an undefined, murmuring character, it is proper to denominate it an indeterminate sound, (as has been already done with respect to respiration), and draw no conclusion at all from it.

Abnormal sounds.—The abnormal sounds arising within the cavity of the heart have been variously denominated, according to the noises to which they have been compared by different observers,—as bellows-sound, saw-sound, &c. Dr Skoda, however, considers any subdivision of the abnormal sounds quite superfluous, and of no diagnostic value, both because the character of the sound frequently varies in the same case, and also because we often find different observers auscultating the same case have totally different impressions of the character of the sound. He therefore comprehends them all under one general name, which has been here rendered "abnormal sound," and frequently "bellows-sound," as being the most common of the abnormal sounds. The points to be attended to are not the differences of the sounds, but where they arise, and whether they are synchronous with the systole or diastole, for upon these circumstances depends their value as diagnostic signs. The physical causes necessary to their production are now generally admitted to be friction of the blood against the walls of the heart or valves, owing to imperfections of the valves, contraction of the orifices of the ventricles, or roughnesses on the ventricular surfaces of the valves. Dr Skoda denies that they can be produced, as has been stated, from spasm, general plethora, or loss of blood, or in fact from any cause not accompanied with organic change in the heart.

All the different sounds which occur in the ventricles may be generated in the aorta. They are produced by inequalities or excrescences on the lining membrane of the vessel, and vary in character according to the state of its calibre. The state of the valves may also give rise to abnormal sounds, as when their lower surface is rough; when there are excrescences on the free edges; when they are rigid or adhering to each other, so that the stream of blood cannot press them quite back to the sides of the vessel; and when they are imperfect. Abnormal sounds of the pulmonary artery are of extremely rare occurrence.

Any cause which produces roughness of the surface of the pericardium, gives rise to certain sounds accompanying the action of the heart. It has been attempted to draw from the character of these sounds, and from their apparent distance, diagnostic marks between affections of the pericardium and of the heart. Dr Skoda has found, however, that the rubbing sound in

the pericardium may imitate almost any sound produced within the heart, while, on the other hand, every variety of the rubbing sound of the pericardium may occur within the heart. And as to the test of distance, it is not to be depended on, as our ideas upon that point will necessarily be in a great measure dependent on the loudness of the sound. There is nothing, therefore, in the character of the sounds themselves, or in their apparent distance, that enables us to determine whether they are produced in the pericardium or within the heart. The only rule that Dr Skoda can give for distinguishing them, is,—that the abnormal sounds within the heart follow exactly the rhythm of its beat, and correspond to the normal sounds, while those in the pericardium appear to be somewhat postponed. But this test cannot be applied when the beat is very short. We must then rest the diagnosis on the other circumstances of the case, such as the indications afforded by percussion, the consecutive changes attending valvular disease, &c. Dr Skoda is further of opinion, that no sound can occur in the pericardium, until there is an exudation of plastic lymph, until, indeed, rough spots are formed on its surface; and that the motions must possess a certain degree of strength, for when they are too weak, the surface of the pericardium may be covered with a thick and rough false membrane, and yet no rubbing sound be produced.

Indications afforded by the normal and abnormal sounds in the ventricles, aorta, and pulmonary artery.—Before entering on this it may be noticed, that the left ventricle is to be auscultated at the spot where the beat of the heart is felt; the right generally at the inferior part of the sternum; the aorta a little to the right and above the middle of the sternum; and the pulmonary artery a little to the left of the middle of the sternum. The position of the right ventricle and pulmonary artery is variable, and can only be determined by that of the ventricles and aorta.

I. *a.* In the left ventricle during the systole.

The (first) *normal sound* without bellows-sound, indicates that the mitral valve closes, and thus prevents the reflux of the blood into the auricle.

Bellows-sound in the place of the (first) normal sound, arises from the imperfect closure of the mitral valve; and in this case it is caused either by the friction of the regurgitating blood on a rough spot of the margin of the valve, or by a stream of blood driven from the ventricle meeting one flowing in the opposite direction in the auricle; it may arise also from friction of the blood on rough spots in the neighbourhood of the aortic orifice, while, at the same time, the mitral valve may shut perfectly; or, thirdly, from a combination of both these conditions. In imperfection of the mitral valve, the pulmonary circulation is always overloaded, and obstruction afforded to the passage of the blood through the lungs, and hence follow increased action of the right side of the heart, tension of the pulmonary artery, and, consequently, preternatural loudness of the sound of the valves, *i. e.* the second normal sound heard over the pulmonary artery. Hence a bellows-sound in the left ventricle during the systole does not indicate imperfect closure of the mitral valve, unless the second sound in the pulmonary artery be at the same time louder than natural. If the second sound of the pulmonary artery be not strengthened, the bellows-sound heard during the diastole in the left ventricle indicates roughness, either of the surface of the valve, or of the lining membrane of the ventricle in the neighbourhood of the aortic orifice.

A bellows-sound accompanying the normal sound, affords the same indication as a bellows-sound without the normal sound;—For the normal sound may be produced by the perfect closure of the mitral valve, while a bellows-sound is at the same time produced by rough spots near the orifice of the aorta; or the normal sound may arise from the expansion of some of the pouches of the mitral valve which remain normal, while the imperfection of the rest gives rise to a bellows-sound.

Absence both of normal and abnormal sounds is a phenomenon which gives no information as to the state of the mitral valve;—For the valve may shut perfectly, and yet the presence of circumstances which deaden the sound may

render it inaudible. But there may also exist imperfection of the mitral valve, and yet no bellows-sound be present, if the current of blood do not meet with any rough spots, or is not sufficiently rapid. This happens, however, very rarely.

b. Sounds heard in the left ventricle during the diastole.

The normal (second) sound, without bellows-sound, indicates that the left auriculo-ventricular orifice is not contracted, and that the blood does not encounter any rough spots in its passage from the auricle to the ventricle.

Bellows-sound, either accompanying the normal sound or alone, indicates contraction and roughness of the auriculo-ventricular orifice, or rough and projecting spots on the auricular surface of the valve without narrowing of the orifice. In contraction of the left auriculo-ventricular orifice, the obstruction of the lesser circulation causes even more rapidly than imperfection of the mitral valve, hypertrophy with dilatation of the right ventricle, and increased loudness of the second sound in the pulmonary artery. If there be merely roughness of the auricular surface of the valve without contraction of the orifice, there is no increase of the loudness of the second sound in the pulmonary artery, unless it happens to be there already from other causes. The greater the contraction of the orifice, the longer and more sonorous is the sound heard; and when considerable, it may give rise to that thrilling sensation felt with the hand over the region of the heart, called by Laennec *frémissement cataire*.

Absence both of normal and abnormal sounds affords no definite indication.

II. *a.* In the right ventricle during the systole.

The normal (first) sound without bellows-sound, indicates that the tricuspid valve closes perfectly, and prevents the reflux of the blood into the auricle.

Bellows-sound alone, or accompanying the normal sound, indicates either imperfection of the tricuspid valve with rough spots on its free edge, or excrescences in the neighbourhood of the arterial orifice, while the valve closes perfectly: the latter, however, occurs very rarely. Imperfection of the tricuspid valve causes an accumulation of blood in the auricle, vena cava, and jugular veins, increased at each systole of the ventricle, and thus is produced the pulsation of the jugular veins. Imperfection of the tricuspid valve is thus indicated by a bellows-sound in the right ventricle during the systole, with simultaneous pulsation of the jugular veins.

b. Hitherto Dr Skoda has never met with an abnormal sound during the diastole of the right ventricle; and the narrowing of the right auriculo-ventricular orifice, if it ever takes place, must be an extremely rare occurrence.

III. *a.* In the aorta during the systole of the heart.

The normal (first) sound without bellows-sound, does not necessarily indicate a perfectly normal condition of the aorta, for it may be present in various abnormal states of that vessel, such as alterations in its capacity or thickening of its coats, which may influence the intensity of its sounds without affecting their character.

Bellows-sound, with or without the normal sound, indicates rough spots on the inner surface of the aorta, or on the under surface of the semilunar valves. But in chlorotic persons, the vibrations of the carotid or subclavian are sometimes propagated down to the aorta, and thus abnormal sounds—usually only dull—may be heard in this vessel, without there being any roughness present.

Absence of sound, normal or abnormal.—The same remark applies here as when this occurs in the ventricles.

b. In the aorta during the diastole of the ventricles.

The normal (second) sound without bellows-sound, indicates the closure of the aortic valves.

Bellows-sound, without the normal sound, if it is prolonged and heard beyond the base of the heart, indicates imperfection of the semilunar valves, with

rough spots on their free edges. If the bellows-sound is only of short duration, or heard only high up in the aorta, it may arise merely from rough places on the inner surface of the aorta, without imperfection of the semilunar valves.

Bellows-sound, ending in a normal sound, arises from the presence of rough places on the inner surface of the aorta, while, at the same time, the semilunar valves close perfectly.

Bellows-sound and normal sound heard together, but so that the bellows-sound is prolonged beyond the normal sound.—This indicates that the aortic valves are expanded by the column of blood, but they are not quite perfect, and the regurgitating blood produces a prolonged bellows-sound.

IV. *a.* Hitherto Dr Skoda has met with only three cases where a sound so prolonged as to be considered abnormal was heard in the pulmonary artery during the systole of the ventricles. But he had not the opportunity of ascertaining by dissection the cause of this.

b. During the diastole he has, as yet, never heard an abnormal sound in the pulmonary artery. The normal sound is strong in imperfection of the mitral valve, and contraction of the auriculo-ventricular orifice as already mentioned; but it may also be strong without any such disease of the mitral valve, if there be hypertrophy and dilatation of the right ventricle, and lively action of the heart.—*Edin. Med. and Surg. Journal*, Jan. 1842.

CASE OF AN ABSCESS SITUATED IN THE GROIN, CONTAINING SEVERAL INTESTINAL WORMS. BY DR ORDINAIRE, Physician at Laurent-les-Macon.

Laurent Gonod, 38 years of age, after a hard day's work at hay-making, was seized with pain in the right groin, and general uneasiness of body. A tumour soon formed, which went on to suppuration. It was opened by Dr O. on his first visit, who believed it to be an ordinary abscess from over-exertion. On the fourth day after this, in changing the poultice, Gonod was astonished to find on it a large white worm, about four decimetres in length. In the evening he felt an itching in the wound, and on removing the poultice, he saw another worm, similar to that which was found in the morning, half-way out of the wound, and which made it evident that the one in the morning had likewise proceeded from the abscess. In three days five worms came away. On the 17th day two grains of millet seed were passed. On the 12th, Gonod walked a league to see Dr O., when the incision was found almost healed. In a short time afterwards he was able to resume his usual employment.

The following is the explanation by which Dr Ordinaire attempts to account for the presence of these worms. He says, that during the period that he served as *interne* in the hospital at Lyons, he had frequently seen foreign bodies in the appendix of the caput cœcum, and he asks, if it is not possible that the five worms found in Gonod proceeded from the appendix vermiformis, which had descended into the crural arch, and become inflamed, giving rise to ulceration, and to the escape of the worms into the cellular tissue, and that an abscess had formed from the irritation caused by them.—Abridged from the *Journ. de Méd. et de Chir. Prat.*, Nov. 1841.

NEURALGIA OF THE FACIAL NERVE DEPENDING ON AMENORRHŒA. BY DR ANDRIEUX (de Brioude.)

In the Annales d'Obstetrique (a new journal from which we expect a great deal, from the names of the collaborators given,) two cases of this disease are reported, which resisted every remedy until the menstrual discharge was re-established. The first case was that of a lady, who, on recovering from a severe inflammatory attack, was seized with a neuralgic affection of the

facial nerve, which caused her the most acute agony. It made its appearance every month. The only remedy from which she derived any benefit was the sulphate of quinine, which mitigated, to a certain degree, her sufferings. Her catamenia had been suppressed for two years, viz. from the commencement of her inflammatory attack, but it was only on recovering from it and regaining her usual strength, that the nervous affection came on.

In the second case, the neuralgia had existed for three months, during which time no menstrual discharge had flowed; on its appearance, however, all pain subsided. In both cases, the affection of the face only showed itself at the menstrual period, and lasted during the time that it ought to have been present. It was generally ushered in by some uneasiness in the lumbar region, with slight bearing-down pains, but not so great as, in a marked manner, to draw to them the attention of the patient.—Abridged from *Annales d' Obstetrique des Maladies des Femmes et des Enfans*, Jan. 1842.

Cases of Unexpected Recovery from Large Abscesses in the Lungs. By Dr Graves.

Dr Graves has published six cases of abscesses in the lungs, which occurred in his own practice and that of his friends, in which complete recovery took place. The abscesses were situated both in the upper and lower part of the lungs, and were pneumonic, as proved in several of them by the excessive fetor of the expectoration, although the history of the case in some would have led (as, in fact, it did) the medical attendant to suppose that they were cases of phthisis. He has given them to the public, to show "that patients may recover, contrary to the usual interpretation of the most significant and decisive stethoscopic symptoms, and therefore seem to merit publication, in order to warn practitioners from relying too exclusively upon physical phenomena, and too hastily concluding that pulmonary lesions, however extensive, thus indicated, must necessarily prove fatal." They show, also, "that real circumscribed abscess occurs more frequently in the pulmonary tissue than Laennec allowed, or his followers seem to believe." The two following cases which we shall give, were under the care of Dr Stokes, whose name is a sufficient guarantee for the accuracy of the physical signs observed.

Case 1. Mr H., a gentleman aged about 22, was attacked with pain in the side, cough, and fever, and in a short time with very copious purulent expectoration. Soon after this, the signs of extensive abscess made their appearance in the antero-superior and lateral posterior regions of the lung. The patient was then considered to labour under tubercular caverns to a great extent. Shortly after Dr S. saw him, he presented the following symptoms:—The whole antero-superior, lateral, and posterior upper part of the left lung, sounded extremely dull; perfectly distinct cavernous breathing, with large gurgling and pectoriloquy were heard from the second rib down to the mamma; and the same phenomena were audible along the fold of the pectoral muscle, from the axilla to the seventh rib. The expectoration was copious, muco-puriform, but not fetid, and the pulse full, regular, and under 90°. The treatment adopted was palliative. The pulse soon became natural, all hectic fever ceased, the dullness of sound on percussion gradually diminished, and the patient, in the course of some months, was perfectly restored to health, all the signs of caverns having completely disappeared.

2. Mr D., aged about 25, high shouldered, and with a remarkable stoop, was attacked with cough in the autumn of 1839. His pulse became quick, he lost flesh rapidly, and presented the usual constitutional symptoms of phthisis in an early stage. Within a few weeks of the invasion of the disease, Mr D. began to expectorate from half an ounce to an ounce daily of a sanious purulent matter, having the colour of urine, but not offensive. He

soon after came to town. The right clavicle was dull on percussion, and the vesicular murmur feeble as far as the third rib. Above the clavicle, most distinct gargouillement existed; and the same could be heard in the acromial region, particularly when he coughed. Soon after this the pulse became quiet, and the expectoration, though still possessing the above character, diminished in quantity. The patient went to the Cove of Cork, where he remained for the greater part of the winter season. He returned in spring, having become very fat, and without the slightest symptom or physical sign of any pulmonary disease.

Dr G. could have added several other instances, besides the six he has published, of pulmonic abscesses which have been cured; but he thought it unnecessary, as those he has given were amply sufficient to show that they are neither so rare nor so hopeless as they are generally believed to be.—Abridged from the *Dublin Journal* for Jan. 1842.

Case where the Pulmonary Artery presented only Two Valves. By Dr Graves.

A man of the name of Bennett was admitted into the Meath Hospital on the 18th November 1841, with symptoms of pneumonia of the right lung, under which he sank. On the post-mortem examination, the following appearances were found:—The lung was solidified, but without abscess; its pleura was thickened, and adhered to that lining the ribs. The pericardium was distended with a straw-coloured fluid, but there was no inflammation of that membrane. The heart was soft and pale, but otherwise healthy. The pulmonary artery was filled with a fibrous clot. There were only *two* valves, and both were coated with a recent deposition of lymph, in some situations almost a quarter of an inch thick. The valves of the aorta were quite healthy, as were also the endocardium and the lining membrane of both of the arteries. There was some calcareous deposit on the mitral and tricuspid valves. There was no effusion into the chest. Dr G. says that the case is most interesting, from the rarity of the pulmonary valves being irregular, and from the circumstance that, when any irregularity of the valves either of the aorta or pulmonary artery does take place, they *are increased in number*. In the Museum of the College of Surgeons in Ireland, there are two specimens where the aortic valves exist in greater number than usual; but Dr G. is not aware of any case where the irregularity just mentioned has been found in the pulmonary artery. The case is also interesting from the large quantity of serum in the pericardium, unaccompanied by inflammation of that membrane, or by infusion into any other part of the body. The man died suddenly, which is accounted for by the state of the pulmonary artery.—Abridged from the *Dublin Journal* for Jan. 1842.

SURGERY.

Wutzer's Operation for Inguinal Hernia.

(*Original Article.*)

Sir,—It is my wish to submit this statement to the Editor of The London and Edinburgh Monthly Journal of Medical Science, with my very respectful compliments.

Having introduced the operation into Belgium, where it acquired, from the energy and influence of M. Seutin, more notoriety than the merely professional habits of its inventor were likely so soon to confer upon it, I feel just so far responsible to those really praise-worthy individuals, that the subject

of animadversion in this instance should at least be fairly stated; that is to say, to the extent of my feeble means of influencing the statement. Personally, I have no stronger motive, but in the subject itself may probably appear more general reasons for requesting your reconsideration of it.

Accept, Sir, the assurances of your very obedient,

J. JEFFERY, M.D.

COLCHESTER, 12*th Feb.* 1842.

PROFESSOR'S WUTZER'S METHOD OF TREATING INGUINAL HERNIA.

The article of last month, p. 194, abridged from *L'Examinateur Médical*, offers, as "the mode followed by M. Wutzer," an account of a process for "the Radical Cure of Inguinal Hernia," which I am convinced that no surgeon will be more eager to disown, than the eminent and skilful professor to whom it is ascribed, or than the ingenious and indefatigable chief of the surgery of St Pierre in Brussels, who has followed assiduously and closely in the path of the former learned professor, in his attempts, by a very safe and easy operation, to cure radically the different forms of that displacement. The professor of surgery at Bonn happens to be remarkably circumspect in the means which he employs, so that he has acquired the character of the most cautious of inventive surgeons; and it would be a notable sequel to the objections waged by the inventor of the *bandage amidonné* against the *bandage immobile* of Larrey, if Professor Seutin had at a later period, given his countenance to a pretended method of cure that was to be effected by means of gangrene. Yet, says the *Examinateur*, "the instrument is kept applied for six or seven days, and when it is removed, the integuments are in a state of gangrene." Will this writer be convinced that gangrene forms no part of the process of Wutzer, when I assert that, further than the discoloration frequently observable under the apex of the operculum, which is the point of greatest pressure, gangrene has never occurred, even as an accident, in any one case in which the rules and practice of that distinguished professor have not been very conspicuously neglected; and that of all the cases that I have witnessed, I remember but one such occurrence; and in that very case, which was treated at the Grand Military Hospital of Brussels, I told the surgeon-in-chief, *the day before* the instrument was withdrawn from the invaginated scrotum, that it was then full late (*assez tard*) to withdraw it. Professor Wutzer is no more responsible for such an accident, than the inventor of the tooth-key, for the torture and mishaps to which surgeons, not knowing the use of it, very commonly expose their patients. Nor is it a demerit of the *invaginatorium herniale*, or of its illustrious inventor, that the operation, even when correctly performed, cannot often be permanently successful. On the contrary, it approves well the humanity of a Wutzer and a Seutin, that, in moments of retirement from the rich field of *éclat*, such as they have found in the cure of club-foot and fractures, they should devote their minds to the contrivance of relief for such unpromising subjects as the inguinal and scrotal hernia, vesico-vaginal fistula, and numberless other accidents which, from their very nature, have, in the great majority of instances, baffled the resources of art. It is by the adhesive inflammation alone, which must necessarily be left to the observation and experience of the surgeon who superintends the operation, that the constriction of the inguinal canal is to be attempted, according to the process of Wutzer. To set up this inflammation, to carry it to the necessary point, and no farther, were considered, from its first institution, the prominent matters of interest, and these were very justly conceived by the talented Professor Seutin. "But," said he, at the close of a winter session (1839-1840,) "out of eight cases I have only been able to cure the moiety; and I have remarked, that in the instances of failure, it is from want of adhesion between the invaginated scrotum and the posterior wall of the inguinal canal, by which the hernia falls, the scrotum still continuing adherent to the anterior wall."

This observation is truly characteristic of the penetrating mind of Seutin. Others, and he himself for a while, overrated the importance of *points of agglutination*; and he had caused to be made an instrument with two subsidiary needles, to perforate the anterior wall of the canal below the first; but in the above remarks he seems to have stepped beyond the apprehension of ordinary observers, and to have seized at once the grand defect of the operation, so far as it was understood up to that period. "Have you no means of establishing an adherence of the scrotum to the posterior wall of the inguinal canal?" said he, when referring his grievance to Professor Wutzer. "Hitherto," replied the latter, "we have no other means than the instrument may furnish; but I think that we shall do well, if we can relieve only half the cases of inguinal hernia, by an operation so safe and easy to perform, and attended with so little pain to the operated, whom even a failure leaves no worse than before."

When I first showed the instrument, and explained its use to Professor Seutin, I was only acquainted with the two earliest cases of Wutzer, one successful, the other a failure; and a third, a double case, right and left, which I saw operated upon by him in the summer of 1839, in which case also he succeeded only in the moiety, there being a relapse on one side, no such disaster being menaced on the other side, by any ordinary exertion of the patient.

In the summer of 1840, however, a circumstance occurred to throw a new light on the operation, to respond completely to M. Seutin's remark on the cause of his failures, and to establish beyond contradiction, that points of agglutination can only be of temporary importance to this operation; therefore the inutility of multiplying them. The first successful case of Professor Wutzer, had now returned to the hospital, bearing a truss, and apprehensive of a renewed disposition to hernia on the side operated. It was examined by the professor, who felt in the inguinal canal, not a hernia, but a cylinder of lymph, or of substance formed upon the exudation of the thickened integuments. Against this cylinder, the old hernial portion of intestine beat at the internal abdominal ring, whenever the patient violently coughed; the part which had been intended as a point of agglutination, when pierced by the needles at the upper extremity of the inguinal canal, was now barely to be distinguished as a cicatrix at the inferior margin of the pubis, and the whole of the invaginated scrotum had descended, leaving nothing but the exuded substance above noticed, to oppose the fall of the intestine. It was this liberation of the scrotum which had alarmed the patient. This, then, is really the result of the successful operation of Wutzer, which only employs a point of agglutination as a temporary scaffold, until the work of exudation be perfected, and the new-formed matter become sufficiently adherent to the walls of the canal; the invaginated scrotum is, in the course of time, gradually separated from the new formation by the weight of the testicle. If this had been a renewed hernia, (I will not say a relapse) two years after reposition, I should still say that the operation and instrument so meritoriously conceived, are of some considerable practical value; but here was a case of cure perfected without any scrotal deformity, and evincing the importance of experience in consummating the projects of inventive surgery. The lesson was not lost upon the surgical clinic of Bonn. A new case was now treated upon the enlarged theory of this fact. The complaint of Seutin was not forgotten, but the point of agglutination was only regarded for as much as it is worth. I should say, however, that from the first, Professor Wutzer never employed the needle but as a means of retaining the instrument in its correct position, and of forming a point of support, while the more general adherence from contact was being perfected between the irritated internal surfaces of the canal, and the invaginated scrotum. Though he found the small perforation useful, in enabling one to estimate the plasticity of the part, yet the needle was not relied upon as an agent of irritation. It usually excited a slight inflammation around its in-

considerable wound, but this was extended by the scrotum invaginated, and by the cylinder combined with its operculum, compressing the parts, and propagating the irritation throughout its circumference. And when it became advisable to moderate the excitement, and to remove the cylinder of ebony or ivory, it was not forgotten to substitute a milder agent in its place, by introducing charpie in sufficient quantity, to maintain the desired contiguity and growing adherence of parts, so that some gentle and gradually relaxing pressure was thus constantly kept up until the completion of the cure. In the present instance, however, more particular attention seemed to be paid to this essential point—the propagation of the irritating forces throughout the circumference of the cylinder. The treatment of the case after operation, was committed to Herr Schaeffer, an experienced practician of the surgical clinic. The compression between the operculum and the cylinder was regulated as formerly, but a slight compression was also exerted, by means of a bandage, gently urging the instrument against the posterior wall of the inguinal canal; and the same compression was continued after the substitution of charpie for the cylinder of ivory; and indeed until and long after the completion of the cure. During the treatment of this case, Professor Wutzer promulgated the following subsidiary ordination. "We recommend to the hernia patients operated on, to wear the truss three months after they quit the hospital."

A remarkable case of scrotal hernia reduced, but not operated, during the same session, renders no less remarkable the prognosis pronounced upon it by Wutzer. A man presented himself with a tumefied scrotum extending to his knees, and of proportionate width to resemble the full udder of a cow. The external abdominal ring on the left side was enlarged to a hand's breadth; the orifice of the præputium was the only part of the penis distinguishable to the eye; the testicles were healthy, but difficult to find; sometimes liquid, sometimes air, was indicated by percussion, as part of the tumour's contents; on applying the hand to the right side of the abdomen, a great void and contraction of the abdominal parietes were discoverable, corroborating the suspicion, that a large portion, probably all, of the small intestines had descended into the scrotum; and this suspicion was confirmed by a dose of laxative medicine, which caused the peristaltic motion of intestine to be plainly observed in the scrotum. The patient, aged about 36, had suffered this constantly increasing hernia from his sixth year, or earlier, with no other inconvenience than that of supporting so large a burden dangling between his legs, and obstructing his movements. By the daily perseverance of Dr Rossier, the hernia was gradually reduced, and the patient became enabled to retain the reponed intestine for many hours daily, and then to relieve himself by letting some of the burden descend into the scrotum. Professor Wutzer early delivered his opinion, that the patient, whose abdomen had become habituated to the void, might be gradually brought to bear the permanent reposition of the intestine; and, in that case, he might be safely operated upon, with a fair chance of success; but as, unfortunately, neither the patient nor the hospital could support the cost of his continuance there until that time, he advised the man to learn to repeat the reposition for himself, and to wear the truss daily as long as he could; and, in a few months, when he might be able to bear it permanently, to return to the hospital, and be operated on.

I must now, in good faith, recur to Professor Seutin's successes, for the purpose of closing their history. There was only time for a few passing inquiries at his clinic of St Pierre, in the spring of last year; but he found occasion to tell me his story, which was a short one. "Alas!" said he, "all my successful cases had gradually returned with relapses, save one, which I considered my stronghold, and that, my first and last, came in but yesterday,—*une réchute, Monsieur!*" I had barely time or courage to say, that I thought we were improving at Bonn, and acquiring a better understanding of the operation. "Oh!" rejoined he, with all the incredulity imaginable,

"we have Monsieur ——, of the Belgian army, who has modified the process, and is now going to effect the true *radical cure*."

Here, again, I would remark, that an operation which has secured a hernia patient during only one full year from the vicissitudes of a truss, was not without value, and I doubt not that the patient would gladly submit to its repetition, with the promise of another such a twelvemonth's immunity. Women return repeatedly, and one has returned fifteen or sixteen times, to suffer the painful operation for vesico-vaginal fistula; yet why should surgeons repeat that operation,—why recourse be had to every contrivance that art can suggest,—why the admirable needle-holder of Wutzer have tasked in its production the invention of that excellent surgeon, to facilitate an operation, successful, perhaps, once or twice in forty cases, but always exquisitely painful,—if we are not to persevere, even with better chances of success, in attempting to relieve permanently a calamity not much less grievous, by means of an operation that derives none of its importance from the infliction of pain? The chief circumstance against any operation for hernia, is the constitutional tendency to that affection in the majority of its patients; and, until that constitution can be changed by hygienic and internal treatment, no operation may succeed, or, if it succeed, the relaxed nature of the abdominal fibre may only give way the more readily in another direction; but when the hernia has resulted from accident, in a constitution not remarkably disposed to it, the operation has good chance of a happy event. However, the constitution of patients, and the occurrence of bad events from a repetition of the causes first productive of hernia, are no evidence against the operation. Possessing the instrument of Wutzer, and preferring his operation to any other means of relief that have hitherto been proposed for inguinal hernia, I shall not hesitate to employ it in any case to which I may find it applicable. The only useful modification of the instrument is an enlarged breadth and diminished curvature of the operculum, as directed by Professor Wutzer himself; and if I required a new instrument to be made, I would have the circumference of the cylinder flattened into an ellipsis, the longer diameter of which to correspond with the improved operculum. I conceive that both these improvements would favour the design of antero-posterior compression.

I know nothing of the operations of MM. Sotteau and Latens, under the treatment of the latter of whom a hernia patient is said to have died by the operation; but I trust that I have stated enough, not merely to exculpate Professors Wutzer and Seutin from the rash and really irrational character imputed to the operation by the *Examinateur*, but also to show, that they have conducted their experiments with becoming spirit and humanity. In all the operated cases that I have witnessed, or otherwise become acquainted with, in Bonn and in Brussels, in only one, and that the *second* of Wutzer, was the operation attended by remarkable constitutional symptoms, and these, in that case easily attributable to other causes, were not of sufficient importance to demand the removal of the instruments. The minute clinical history of the case thus relates the fact:—

"An hour having almost elapsed after the operation, (March 6, 1839,) the patient was seized with a sudden chill, and became greatly troubled in mind. Scarcely any pain was present in the right groin, the pulse not changed, being at 60; nevertheless the patient complained. Fifteen drops of the Thebaic tincture were administered to him, which being done, the chill receded, and the patient, now tranquil, yielded to sleep during three hours. In the evening, almost no fever; patient cheerful; a little pain in the place where the invaginatorium presses the parts; diet antiphlogistic."

But this was the case of a boat-builder, whose previous diseases had been small-pox, nervous fever, chronic rheumatism, and, more recently, a tertian intermittent fever, and external rheumatico-catarrhal otitis.

With this very trivial exception, the history of the *first* case may be applied, with little variation, to all. It thus describes the condition of the pa-

tient on the evening after the operation, (*Nov.* 8, 1838):—"A little pain had commenced in the integuments pressed by the cover of the instrument, but did not prevent the patient from sleeping well and tranquilly: no irritation of the pulse was perceived. *Nov.* 9. The skin between the cylinder and the operculum swollen, red, hot, painful on pressure; but beyond this situation, no pain; *pulse almost normal; alvine channel not yet opened. Nov.* 10. A little pain in the inguinal region; the integuments less hurt by pressure than yesterday; alvine channel to-day free. The patient being in the best condition, Professor Wutzer, that he might strengthen the inflammation, increased a very little the pressure of the integuments by means of the screws. *Nov.* 11. Little pain; sleep during the whole night quiet; a citrated draught; gruel for his ordinary potion. The patient feels himself well. From this time the condition of the patient daily improved, scarcely any pain was present, sleep quiet, and the patient himself expressed the hope of a happy result. One could feel and circumscribe with the fingers, in the deeper circumjacent parts about the instrument, a tumour daily increasing. *Nov.* 15. At the superior extremity of the instrument, suppuration had arisen from its too great pressure; the condition of the patient otherwise good; the tumour *in profundo* is becoming larger and harder; scarcely any pain; in which state of things, and when the exudative inflammation in the deeper parts seemed already sufficiently advanced, Professor Wutzer, on this day, cautiously removed the instrument."

Here follows all that is contained in the history of this first experimental case, to support the *Examinateur's* exaggerated statement regarding *gangrene*. "Now the place where the elastic needle had pierced the integuments, was found entirely black, to the circumference of *two or three lines*, the skin in this part being dead." Circumstantial as the Bonn histories are required to be, this discoloration is not even represented as a subject of treatment; but the writer proceeds to say, "The invaginated cutis of the scrotum was filled with charpie, and confined by adhesive plasters well applied; the position of the patient being as before, on the back. *Nov.* 18. The invaginated cutis of the scrotum has coalesced in the best manner, and closed the entire inguinal canal as an obturator. The patient is able to quit his bed, to walk, and moreover to cough, the intestine not descending. Sounds, one of which being let down into the canal of the invaginated scrotum, the other into the canal created by the needle, touch each other. The same deligation as on the 15th. After some days, we found all parts of the fistula well healed together and cicatrised, nor did any thing remain but to conduct also to cicatrisation the invaginated cutis of the scrotum."

In this first case, it seems to have been regarded as a compliment to the operation, that the inverted sac formed by the invagination should be obliterated; but the later experience above noted, proves the inutility of this proceeding, which is in no respect subservient to the principle of the operation. The process, never afterwards repeated, is here described:—"For this purpose we washed the invaginated cutis with the caustic liquor of ammonia, and that being filled with charpie, we supported the whole with a truss of very little pressure. It was so managed, that some weeks having elapsed, little was wanting, but that all was healed. Indeed, no traces of the inguinal hernia could be seen; one could feel through the integuments the invaginated cutis tumefied, and the patient, extremely joyful, departed from our clinic cured."

In the second experimental case, the instrument was permitted to remain invaginated longer than in any case on record; there is consequently more notice of mortification, yet only under the apex of the instrument. If any reader should be disposed to think too much of this, let him at least bear in mind that these experimental cases do not constitute the rule and practice of Wutzer, but his principle is deduced from them, and from his later observations; and he now says, that while he leaves the due amount of inflammation most favourable to the adhesive process to be discriminated by the experienced

surgeon, and to be regulated by the special progress of the case under tr ment, he is accustomed to expect the most advantageous period to remove instrument from the fifth to the seventh day. In the *second* experimer case, operated 6th March 1839, on the removal of the instrument (the 16 the history states:—"The cutis under the operculum was diffusedly red, *under the apex black, dead, but as yet adherent;* we refilled the invagina scrotum with charpie, and dressed the depraved cutis with cerate. The tient preserves the supine position, the scrotum is sustained as before, (w cushions of wool,) the patient is better nourished. *March* 19. The infla mation being sufficiently subdued, a warm infusion of chamomile flower applied to loosen the decayed cutis; on the next day, the sphacelous par the cutis could be extracted with scissors; which being done, we found cutis covered with healthy granulations. *March* 22. Cicatrization co mences. An exploration being this day instituted, we found the invagina cutis of the scrotum adherent to the inguinal canal, and without doubt co entertain the hope of a successful event; for the invaginated cutis of scrotum, lying in the inguinal canal, felt not unlike a stopper; nor did intestine descend when the patient strongly coughed."

Here also is mention of *erysipelas*, but how connected with the operat the reader will judge:—*April* 12. "The inguinal canal firmly closed wit cicatrix; but the patient remains in the clinic on account of an erysipe arisen from offensive diet."

These few extracts will, I hope, suffice to correct the hasty impression a Parisian critic, while they relate to such points of treatment as usually terest the inquiries of surgeons. In what precedes, I have only endeavo ed to render a juster statement of the progress and prospective destiny of t operation, than was last month selected from the *Examinateur Médical*, thus to repair, in some very moderate degree, an injustice which that sel tion has done to the reputation of two highly-gifted and meritorious men

Successful Operation upon a Gentleman born Blind. By Dr Franz

Dr Franz has published, in the Philosophical Transactions, Part i., 18 an interesting case of congenital cataract, in which, after the operation keratonyxis had been performed on the right eye, when the patient was t years old, and twice, during the next four years, on the left, with hardly a success, light was, to a certain degree, perceptible, he had succee in restoring the sight when the invalid had attained his eighteenth year. F. was consulted about a double congenital squint, under which he labour and, at the same time, his opinion was taken about the cataract. The ri eye was found to be hopelessly gone. The opaque capsule, and a part of opaque lens of the left, were removed, when the sight gradually return The following facts will, we think, be interesting:—"When the patient fi acquired the faculty of sight, all objects appeared to him so near, that he v sometimes afraid of coming in contact with them, though they were reality at a great distance from him. He saw every thing much larger th he had supposed from the idea obtained by his sense of touch. Moving, a especially living objects, such as men, horses, &c., appeared to him ve large. If he wished to form an estimate of the distance of objects from own person, or of two objects from each other, without moving from place, he examined the objects from different points of view, by turning head to the right and to the left. Of perspective in pictures he had of cou no idea; he could distinguish the individual objects in a painting, but co not understand the meaning of the whole picture; it appeared to him unn tural, for instance, that the figure of a man represented in the front of picture should be larger than a house or a mountain in the back-grou All objects appeared to him perfectly flat. Thus, although he very w knew by his touch that the nose was prominent, and the eyes sunk dee

in the head, he saw the human face only as a plane. Though he possessed an excellent memory, this faculty was at first quite deficient as regarded visible objects. He was not able, for example, to recognise visitors unless he heard them speak, till he had seen them very frequently. Even when he had seen an object repeatedly, he could form no idea of its visible qualities in his imagination without having the real object before him. Heretofore, when he dreamed of any persons, of his parents, for instance, he felt them and heard their voices, but never saw them; but now, after having seen them frequently, he saw them also in his dreams. The human face pleased him more than any other object presented to his view. The eyes he thought most beautiful, especially when in motion; the nose disagreeable, on account of its form and great prominence; the movement of the lower jaw, in eating, he considered very ugly. Although the newly-acquired sense afforded him many pleasures, the great number of strange and extraordinary sights was often disagreeable and wearisome to him. He said that he saw too much novelty that he could not comprehend; and even though he could see both near and remote objects very well, he would, nevertheless, continually have recourse to the sense of touch." On the 21st of September, he was operated upon for congenital strabismus of both eyes. Shortly after, the right eye, which had been amaurotic, was able to distinguish light from shade, but objects appeared in a different situation from that which they really held. He, for this reason, in walking across a room, frequently came in contact, unawares, with articles of furniture. In going along a crowded street, his sight became perplexed by the number of objects that he saw, and he was obliged to shut his eyes. The sensation produced by the object last seen had not disappeared from the retina before a new impression was made upon it, so that he suffered from great confusion of ideas, anxiety, and even vertigo. He was relieved from them by closing his eyes for a short time. He gradually lost these, but the old habit of using the sense of touch to examine objects he had not entirely got rid of.—Abridged from *Dublin Journal* for November 1841.

MIDWIFERY.

Cases of Ante-version of the Uterus, reduced by Position alone. By Dr Godefroy, Professor of Midwifery á l'Ecole de Médecine de Rennes.

Madame F., mother of two children, and having a large pelvis, was seized in August 1839, while in the fourth month of pregnancy, with a sense of weight and dragging sensation in the groins and pelvis, and a constant desire to void her urine. When she was seen by Dr G., the mucous membrane of the vagina was protruded beyond the vulva, from the strong efforts that she was making to empty the bladder. A catheter was introduced, which drew off about a wine-glassful of urine. Upon practising the toucher, the neck of the uterus was found situated upwards and backwards, and below the sacro-vertebral angle; in front, a round tumour was felt pressing upon the pubis. The patient having been placed as for a case of laborious labour, the uterus was restored to its natural position by introducing one fore-finger into the vagina and the other into the rectum. In the following year, at the same period of pregnancy, she was seized with similar symptoms to those described above. Dr G. not being able to attend upon her immediately, he recommended her to be placed in a position, which, in all probability, would relieve, if not effectually cure her. He advised her to be put on the side of the bed, with her head and hands on the floor, and with only the anterior part of the thighs and legs resting on the bed. He says, that in this position the intestines are drawn towards the diaphragm; that the pel-

vis is consequently emptied, and the uterus, being no longer pressed upon, resumes its normal situation. And this is what happened to the lady in question. She had scarcely been fifteen minutes in the above posture, when all painful sensations subsided. She then went to bed, where she was when Dr Godefroy saw her, two hours after her attack. At this time she only complained of a feeling of weariness in the pelvis, with heat of the external parts. He did not practise the toucher. Being so delighted with the result of this case, he determined to try the effect of the same position in the next case that he saw, which was not till October 1841. CASE 2.—Madame C., between three and a half and four months pregnant of her first child, 33 years, and well formed, was seized, on the 27th October 1841, with a feeling of weight in the pelvis, and with frequent calls to make water. She went to bed, but did nothing else. She was able to get up next day. Dr Godefroy was sent for on the morning of the 29th, as she thought she was going to have a miscarriage. He found similar symptoms to those already detailed in the first case. Upon examining her by the toucher, the neck of the uterus was felt behind and towards the curvature of the sacrum, while the fundus was in front and behind the pubis. As the bladder did not appear full, the catheter was not introduced. The patient was placed in the position recommended, viz., her head and hands on the floor, with the front part of the thighs and legs resting on the bed. Dr G. was witness of the progressive improvement observed in this lady; at first the feeling of weight in the pelvis diminished, and then the desire to void urine ceased. As the position was very fatiguing, she was supported by the shoulders. She was kept for 20 minutes in this posture. Upon her lying down again in bed the uterus was felt by the toucher to be in the natural position. He is anxious that his medical brethren should adopt the same mode of treatment in similar cases, until it can be seen whether a more extended trial will sanction its employment.—Abridged from *Annales d' Obstetrique des Maladies des Femmes et des Enfans*, Jan. 1842.

MATERIA MEDICA.

LIME MOXA.

Lime has been employed by Dr Osborne as a moxa.

It is used as follows: A little quicklime, to the depth of half an inch, is put within a *porte moxa*, or a circular piece of card, and applied to the skin; water is then dropped on it, and mixed. In about two minutes it swells, and an intense heat is given out. It has been calculated that the heat produced is equal to 500° of Fahrenheit. If it is kept on as long as the heat continues, the whole skin is destroyed; but by removing it sooner, an issue to any extent may be formed. Dr O. prefers this kind of moxa, from the great heat suddenly produced, and from no fire or sparks being seen, so as to alarm the patient. To ascertain the depth to which this moxa acts, he applies it to the surface of an egg, and then observes the thickness of coagulated albumen formed beneath. The size of the ulcer formed is always twice as large as that of the lime applied. When the lime is prepared from calcareous spar, the heat produced on the addition of the water is sudden and intense, and the pain is proportionately urgent. For ordinary purposes, however, well-selected pieces of lime, from a lime kiln, answer well if *fresh*, but not otherwise.—Abridged from the *Dublin Journal* for Jan. 1842.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

Monday, Jonuary 24, 1842.

Hemorrhage from the vagina in old women.—Mr Dendy related the case of a lady about 80 years of age, of previous good health, who some months ago found her night-gown saturated with blood, which had proceeded from the vagina. The patient, fancying the discharge to be menstrual, took violent exercise in order to promote it. The blood coagulated, and continued to discharge for three months. Soon after this the patient came under the care of Mr Dendy, who prescribed cold cloths to the vagina, acids, and the recumbent posture. She has improved considerably under this treatment, but the discharge has not altogether abated. On examination per vaginam, a soft fungoid mass situated about the os uteri was perceived, and when this was touched, no pain was felt, but the discharge of blood immediately increased.

Dr Chowne remarked, that hemorrhage from the vagina was not uncommon in old women. The veins of the vagina occasionally became varicose. It was difficult to distinguish between coagula and fungoid growths in the vagina. The speculum should be used.

Mr Proctor said, that a varicose condition of the veins of the vagina did occasionally take place in old age. At this period there was a general disposition to congestion. The occurrence of the catamenia in old age was very rare.

Mr Roberts had seldom found hemorrhage from the vagina in old persons without ulceration of the uterus.

Monday, January 31, 1842.

1. *Apoplexy.*—Dr Clutterbuck said, that he had been struck with the frequency of apoplexy during the last few weeks. He had long observed, that this disease was particularly common in winter, and in early spring, but was unable to account for the fact. The diversity of treatment pursued in this disease by different practitioners was very great. In the recent case of a lady, a druggist had applied two dozen leeches, the patient deriving considerable benefit; a medical gentleman arrived, disapproved of the treatment, and forthwith took steps to arrest the bleeding: brandy was administered, and in the course of 48 hours the patient died.

When blood-letting was employed in apoplexy, it was very frequently carried to an unjustifiable extent. The abstraction of blood, however great, could not possibly remove effusion, which had already taken place, and operated chiefly by abating the violence of arterial action within the head.

Calomel was the cathartic most commonly used in apoplexy, and it was commonly administered in large doses. The drug was not the best suited to the disease: it was inefficacious, seldom producing any considerable purging after the first dose.

Mr Pilcher remarked, that apoplexy for the most part depended on rupture of a blood-vessel, and on consequent effusion of blood. Bleeding did not remove extravasated blood, but prevented further effusion. He had been surprised to find large quantities of effused blood in the substance and in the ventricles of the brain, in bodies dead of apoplexy. In the brain of an old female subject, dead of apoplexy, he had found about 12 or 14 oz. of effused blood: the brain was extensively lacerated,

particularly at the septa and corpus callosum: the substance of the viscus was blanched, and the blood-vessels were empty. It was not yet decided whether the brain was compressible. Perhaps when more than the usual quantity of blood was present in one part, less than natural was present in another portion of the brain.

Mr Proctor said, that in persons of great muscular power, and of general vigour, liberal bleeding proved highly useful; but that the abstraction of blood, for the most part, was detrimental in old subjects, in females, and in subsequent attacks of the disease. In *his* early days the general impression was, that it was almost impossible to abstract too much blood when a patient was comatose. Calomel was not generally administered as a mere cathartic, but for the purpose of acting also on the liver: it was not to be relied on in sudden cases, but one or two doses given afterwards was good practice, especially when combined with some other purgative.

Mr Clifton urged the propriety of adapting the treatment of apoplexy to the circumstances of the case, and of exercising discretion in the abstraction of blood. Blood-letting should not be carried so far as to produce syncope, for this condition was usually followed by reaction. The excessive abstraction of blood in this disease materially injures the restorative powers of the system. Nine years ago, he attended a female aged 73 years, for an attack of hemiplegia: she had no headache,—no blood was drawn,—aloetics were administered, and the patient recovered. This woman was still alive, and within a late period she had walked four miles. However, he did not recommend the omission of blood-letting in apoplexy, but discretion in its administration.

Mr Clarke remarked, that the brain of animals bled to death, was usually found in a highly congested condition. He had lately seen, with a medical gentleman, a man who was threatened with an attack of apoplexy: under the application of leeches he recovered. Subsequently, an attack of this disease supervened; a chemist attended and abstracted a very large quantity of blood. The patient died. A coroner's inquest was held, but as the brain was found to be congested, the chemist was held to be exculpated.

2. *Delirium Tremens.*—Mr Pilcher said, that a few days ago, he had visited a woman labouring under delirium tremens. The patient was 35 years of age, and had been a hard drinker for ten years. She was agitated, screamed, had tremor, and kicked the bed-clothes. Vision was lost; the iris was half contracted, and little mobile. The patient retained her consciousness. But shortly afterwards, she became much worse, and, after suffering convulsions for some hours, died. This woman had borne no children, but had miscarried on several occasions. She had latterly suffered symptoms of disease of heart.

Autopsy.—The sinuses of the brain were distended with fluid blood; the arachnoid membrane was opaque, and, in some parts, presented spots of sero-fibrin; the pia mater was much congested; four or five ounces of straw-coloured serum were found in the ventricles; the structure of the brain was blanched, and, when incised, presented fewer bloody points than usual; the basilar and carotid arteries contained between their coats white deposit, such as commonly precedes ossification, this deposit being greatest in the basilar artery near its bifurcation. The heart was much enlarged, and had pushed the lung to a side; the left ventricle was about four times its usual size. The liver was hard, mottled, and about three times its natural dimensions. The kidneys were congested and small. Some small cysts existed in the ovaries, and a few hydatids were found near the Fallopian tubes. The other organs were healthy.

Mr Proctor regarded delirium tremens as the very reverse of inflammation of the brain or of its coverings. Convulsions had been experienced in all the mortal cases of this disease that had come under his care. He usually administered opium and ammonia.

Mr Clifton thought, from the condition of the arachnoid membrane in the case related, that there had existed other disease besides delirium tremens. He had never seen enlargement of the heart without enlargement of the liver.

Mr Linnecar said, that the treatment of apoplexy should be modified according to circumstances. Blood-letting proved injurious when the face was blanched, and when the patient was bathed in sweat; but useful, when the face was flushed, and when there existed manifest fullness. Apoplexy, attended by collapse, sometimes depended

on derangement of the stomach, and, on these occasions, vomiting proved beneficial. In the treatment of delirium tremens, he administered opium, for the purpose of soothing the brain; and therefore did not combine it with ammonia, which was a stimulant.

Mr Clifton remarked, that he preferred ammonia to the domestic stimulus, because the latter was liable to be taken to excess.

Mr Linnecar replied, that when a stimulus was indicated, he gave ten drops of the tincture of opium in a bitter infusion, and he found this plan to answer well.

3. Mr Crisp exhibited to the Society, *a stomach, the seat of great structural changes, taken from a man of whose case the following is a summary:*—Mr M., aged 68, had enjoyed tolerable health till within the last two years, when he fell from a height, and fractured both bones of the fore-arm. A few months ago, he suffered an attack of peritoneal inflammation, and has of late complained of pain in the region of the stomach after eating. During the last ten months, he became more and more emaciated; the lower extremities became œdematous, and effusion took place in the abdomen. No tenderness was experienced at the epigastrium upon pressure. Gas was frequently eructated from the stomach, and the food appeared to meet with obstruction in the œsophagus. He spat large quantities of white, glairy, and offensive fluid; and, about fourteen days before death, he vomited a large quantity of fluid like coffee grounds. This latter fluid continued to be ejected whenever the patient took food or drink, until the period of his death. The quantity vomited daily was about three pints. He died on the 27th ult.

Examination after Death.—The body was much emaciated, and of a straw-coloured tint. The abdomen contained three quarts of serum, mixed with coagulable lymph. The omentum was highly vascular, and studded throughout with tubercles. The stomach, which was exhibited to the Society, was the seat of much morbid alteration, which Mr Crisp considered as *malignant*; the coats were about four times their natural size, in respect to thickness, and were almost cartilaginous; at one point of the anterior surface, there was a small spot about the size of a sixpence, where the coats were considerably attenuated; the cardiac orifice was so much diminished as scarcely to admit the end of a goose quill, and its internal surface was the seat of some ulceration; the mucous and peritoneal coverings were in some points highly vascular; the pylorus, at one part of its circumference, was an inch or an inch and a half in thickness, and was surrounded by tuberculous deposit of a somewhat cartilaginous character. The stomach was adherent to the surrounding viscera. The liver presented a greyish tuberculous appearance. The other organs of the abdomen were healthy. The treatment had latterly consisted of hydrocyanic acid and opium. The habits of the patient had been temperate. Many years ago he had suffered Walcheren fever.

Mr Roberts said, that he had found such cases to be beneficially treated by hyosciamus and spermacetic mixture.

Mr Pilcher remarked, that many morbid alterations were commonly called carcinomatous, which were merely the result of chronic inflammation. He did not regard the structural changes of the stomach before the Society as of a malignant character. The case was one of hypertrophy, and might be the result of chronic inflammation. There were varieties of carcinomatous structure: one was the result of strumous inflammation.

Dr Theophilus Thomson regarded the morbid structure of the stomach as hypertrophy, tending in some parts to carcinoma. Vomiting occurred more frequently when carcinoma was seated at the pylorus, than when located at the cardiac extremity of the stomach. When the pylorus was obstructed, it sometimes happened that vomiting did not occur for several days together.

Dr Bennet said, that in many cases of reputed malignant fever, nutrition of the body continued unimpaired till within a few days of death. A few years ago, he had met several cases of reputed malignant disease of the stomach, in which the adipose deposit was abundant. In such cases there existed no disposition to contaminate the fluids, and he therefore doubted whether the disease was malignant.

Dr Thompson was disposed to regard strumous disease as the result of an error in the blood, dependent on impaired assimilation. The strumous tubercle was foreign matter, which acted as an irritant to the surrounding tissue. Clots of blood

had been found in the spleen of some monkeys, which had died in the Jardin des Plantes at Paris, and in the clots, tubercles had been discovered. Schroeder van der Kolk, of Utrecht, had shown, that fungus medullaris commenced in the veins. The same authority believed that no increase of structure took place when the arteries originated disease, and that an increase occurred when the veins were the primary source of morbid structure.

[*We are obliged to postpone the remainder of the report of this Society, as well as an account of the proceedings of various other similar institutions, till next Number.*]

MISCELLANEOUS MEDICAL NEWS.

PRESENTATION OF PLATE TO PROFESSOR SIR GEORGE BALLINGALL.—On Thursday last a deputation, consisting of the following gentlemen,—Dr Hacket, Surgeon to the Forces; Alexander Cockburn, Esq., Surgeon, Royal Navy; Drs Smythan and Bell, H.E.I.C. Service, Dr M'Lagan, and Dr Pagan, waited on Sir George Ballingall, at his house in Heriot Row, for the purpose of laying before him certain resolutions entered into at a meeting of Medical Officers, held in Edinburgh Castle on the 29th March 1841, and of presenting Sir George with a dinner service of Plate, consisting of an elegant silver Tureen and other articles, bearing the following inscription:—

Presented to

SIR GEORGE BALLINGALL, M.D., F.R.S.E.,

PROFESSOR OF MILITARY SURGERY IN THE UNIVERSITY OF EDINBURGH,

BY

MEDICAL OFFICERS OF THE ARMY, NAVY, AND H.E.I.C. SERVICE,

WHO HAVE ENJOYED THE BENEFIT OF HIS INSTRUCTIONS

OR THE HONOUR OF HIS FRIENDSHIP;

IN TESTIMONY

OF THEIR RESPECT FOR HIS PRIVATE AND PROFESSIONAL CHARACTER,

AND THEIR SENSE OF THE VALUE OF

HIS PUBLIC LECTURES.

Naval and Military Gazette, Feb. 12, 1842.

PROFESSORSHIP OF POLITICAL MEDICINE.—The College of Surgeons in Ireland have recreated a chair with this name, and elected Dr Maunsell to fill it.

MEDICAL CORONER FOR CHESHIRE.—The contest terminated on the 29th of December, when Dr Churton, surgeon, was elected. His principal opponent was Mr Massey, a druggist, nephew of the retiring coroner.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—On Saturday the 15th of January, Dr Thomas Beatty was unanimously elected Professor of Midwifery, and Dr O'Brien Bellingham was unanimously elected Professor of Botany to the R. C. S. in Ireland.

OBITUARY.

Died at Rome, on the 26th of February, Thomas Gloag, Esq., M.D., of Limefield, surgeon there.

BOOKS RECEIVED.

1. A Treatise on Dislocations and Fractures of the Joints. By Sir Astley Cooper, Bart., F.RS., Serjeant-Surgeon to the King, &c. A new edition, much enlarged, edited by Bransby B. Cooper, F.R.S., Surgeon to Guy's Hospital. 8vo, pp. 576. London, John Churchill, 1842.

By the death of Sir Astley Cooper, Surgery parted with one of the brightest ornaments the science ever held, at any period of time, or in any country. On the decease of a much-esteemed friend, some memorial, however slight, is eagerly sought after, whereby affection may be cherished, and the remembrance of the departed more permanently and vividly retained. So has there arisen in the breasts of British surgeons a desire to possess something thus related to the memory of him whom, for many years, by one consent, they not only venerated as their head, but loved as their friend and brother. This desire has been opportunely gratified by the appearance of this work, a new issue of Sir Astley's most prominent literary effort, containing new matter which he had himself intended to communicate, and further illustrated by his nephew and literary executor—dedicated to that profession in which he laboured so earnestly, and with such success—for which and

all its members he ever entertained a most sincere regard—whose interests he so powerfully advanced—and whose confidence, respect, and grateful affection, he both fairly won, and long and gently held. He would indeed be censorious who in such circumstances could strictly sift the merits of the editorial department; the text has long been beyond the range of modern criticism. Our pleasing duty is simply to announce to our surgical readers, that this expected boon has been now conferred on them in a manner most creditable to all parties, (the talented illustrating artist certainly not excepted), and to record our own humble but sincere testimony to the worth and greatness of Astley Cooper.

2. An Exposition of the Pathology of Hysteria: elucidated by a reference to the Origin, Diagnosis, Symptomatology, Pathology, and Treatment of Hysterical Amaurosis. By E. O. Hocken, M.D., &c. 18mo, pp. 32. London, Highley, 1842.

This Essay was published in the Edinburgh Medical and Surgical Journal; and an abstract of it was given in the last number of this Journal, p. 182.

3. An Investigation of the Present Unsatisfactory and Defective State of Vaccination, and the several expedients proposed for removing the now acknowledged defects of the Jennerian practice; in a series of Lectures, addressed to Dr George Gregory, Physician to the Small Pox and Vaccination Hospital, London, and which are also intended as an Answer to the Queries of the Academy of Science in Paris, proposed as a subject of a Prize Essay. By Thomas Brown, formerly Medical Practitioner in Musselburgh. 8vo, pp. 139. Edinburgh, Maclachlan, Stewart, & Co., 1842.

This work we intend to notice.

4. A Brief Memoir of George Birbeck, M.D. By Henry Clutterbuck, M.D. Read before the Medical Society of London. Pp. 16. London, 1842.

This memoir of a late distinguished member of the medical profession, is interesting not only to the profession, but to the public at large. Dr Birbeck for many years had devoted the energies of his comprehensive mind to the diffusion of scientific knowledge among the masses of the people, and occupies a distinguished place in the ranks of those who have made exertions to elevate the moral condition of the public. Dr Birbeck was more distinguished for his devotion to this cause, than to medical science, to whose stores we are not aware he was an extensive contributor.

The duty of recording the particulars of the life of Dr Birbeck, has been undertaken by his friend, Dr Clutterbuck, the president of the Medical Society of London, of which Dr Birbeck was a fellow; and the task has been discharged in a manner highly creditable to the heart of the venerable author. We give the opening paragraph:—"It is at all times a grateful, though a painful task, to commemorate departed worth. Such feelings are greatly enhanced when the object of them is rendered dear to us by long and familiar intercourse; and such was the case with the highly distinguished individual who is the subject of the following brief remarks: from his earliest appearance as a public character in this metropolis, till almost the hour that the hand of death fell on him, I had the happiness (as I cannot but deem it) of possessing his uninterrupted friendship, and his fullest professional confidence. We were associated in office for a period of nearly thirty years, during which not a single unkindly feeling that I am aware of existed between us. Indeed, his mild and amiable manners, not less than his upright and honourable principles, rendered it almost impossible that such could be the case."

We gather from the Memoir, that Dr Birbeck was born in Settle, in Yorkshire, in 1776; that he graduated at the University of Edinburgh in 1799; and that he was shortly afterwards appointed to succeed Dr Garnett in the Professorship of Natural Philosophy in the Andersonian University of Glasgow.

While in Glasgow, Dr Birbeck delivered gratuitous lectures on philosophical subjects, for the benefit of the operative classes. Dr Birbeck left Glasgow in 1804, and settled in London in 1805.

"In the year 1823, he took a leading part in the formation of the London Mechanics' Institution, to the support of which he contributed most liberally, both by his purse and personal exertions." From personal knowledge, we know that his exertions proved highly useful—that he was much esteemed during life by the humbler classes—and that his memory is cherished by a large portion of the inhabitants of Westminster.

We select the following paragraph, as it bears upon the history of two eminent societies:—"My more immediate object is to speak of him in his professional capacity, and more especially in relation to this Society, of which he was for many years an active member, taking a warm interest in most of its proceedings. He was one of those who opposed themselves to the attempt that was made to monopolize and perpetuate in the person of a single individual the chief honours of the society. Their efforts were unavailing at the moment, though they afterwards proved successful. Their failure, however, was the immediate cause of the secession of a considerable number of the most able and influential members of the Society; and thus led to the formation of the Medico-Chirurgical Society, that has done so much honour to its founders."

The author of the memoir passes a high eulogium on the medical character of Dr Birbeck, which, we have reason to believe, was well merited. However, Dr Birbeck never attained to any great eminence as a practitioner, nor did he obtain that large amount of practice enjoyed by many of his professional brethren in the metropolis.

Dr Birbeck suffered on several occasions attacks of derangement of the liver, but enjoyed on the whole very good general health. The memoir informs us, that Dr Birbeck, for about a year and a half before his death, suffered from irritable bladder, and enlargement of the prostrate gland. Latterly he frequently required the use of the catheter. He suffered severely, and died on the 1st December 1841.

It is somewhat remarkable, that on inspection of the body after death, a calculus was discovered in the bladder, although its presence had never been suspected, and although the catheter had been frequently introduced by skilful surgeons.

At the conclusion of the memoir, the author takes occasion to remark on the very abstemious habits of his late friend, and says, that a "rigid abstinence in regard to either food or drink, is not, generally speaking, advisable." In this opinion, most judicious persons will concur. But we do not think the author has been sufficiently guarded in the selection of terms to support this position; for example, he says, "Nature supplies us with hardly anything perfect. We inhabit a climate by no means the best accommodated to our wants. Nature does not even supply us with adequate or proper food, unless herself stimulated by artificial means." Under a limited view of our situation, such a picture may seem just; but assuredly our position here, when regarded in a comprehensive way, presents a perfect provision for our wants, such as is well calculated to demand our warmest gratitude.

5. On the Treatment of Stone in the Bladder, by Medical and Mechanical Means. By R. Willis, M.D., of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c. 8vo, pp. 183. London, Baillière, 1842.

This little work, alike addressed to surgeons and physicians, evinces much talent and discriminating accuracy. We shall give some extracts in an early number.

6. Catalogue of the preparations illustrative of Normal, Abnormal, and Morbid Structure, Human and Comparative, constituting the Anatomical Museum of George Langstaff. 8vo, pp. 518. London, John Churchill, 1842.
7. Letter to the Right Honourable George, Earl of Aberdeen, K.T., &c. &c., Principal Secretary of State for Foreign Affairs, Chancellor of the University and King's College of Aberdeen, on the state of the Schools of Chemistry in the United Kingdom. By William Gregory, M.D., F.R.S.E., M.R.I.A., Professor of Medicine and Chemistry in the University and King's College, Aberdeen. 8vo, pp. 35. London, Taylor and Walton, 1842.
8. An Essay on the Influence of Constitution in the production of Disease. By Edward Octavius Hocken, M.D., &c. 12mo, pp. 64. London, Highley, 1841.
9. Principles of Surgery. By James Syme, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen. Thi tion, enlarged and illustrated w woodcuts, and 14 plates. 8vo, p London, Baillière, 1842.

Reviewed in the present Number.

10. Researches into the Causes, I and Treatment of the more pr diseases of India, and of warm c generally. By James Annesley, F.S.A., late President of the B Board of Madras. Second 8vo, pp. 606. London, Longma 1841.
11. Anatomy of the Urinary Bladd Perinæum of the Male. Illustra engravings. With Physiologic thological, and Surgical Observ By Alexander Monro, M.D., F. Professor of Anatomy in the Uni of Edinburgh. Edinburgh, Mac Stewart, & Co., 1842.
12. Practical Treatise on Auscu By M. Barth, M.D., and Henry M.D. Translated, with notes, by Newbigging, M.D. Edin., &c. pp. 398. Edinburgh, Mac Stewart, & Co., 1842.
13. Substance of a Lecture on the cations of Chemistry to Medicin troductory to a Chemical Cours Newcastle Medical School. Glover, Lecturer on Chemist Toxicology. 8vo, pp. 16. Gat 1842.

TO CORRESPONDENTS.

The space afforded to original communications is greatly regulated by th and quantity of the matter we may have thought it necessary to select fron Journals. We beg that our friends may bear this in mind.—It was not on a of the greater value of the paper Dr B. refers to, that we gave it a place in ence to another; but simply for the purpose of making way for the Periscope. note will we trust in the mean time satisfy some of our friends.

Communications in next number on the Pathology of Typhus Fever; also mainder of our analysis of Gerber.

ERRATA.

Page 142, line 17 from bottom, *for* "A ready approximation," *read* "A appreciation."

Page 255, line 19, *for* "humour," *read* "humoura."

Page 257, *for* "sclerotica," *read* "sclerotiсæ."

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on the Pathology of Lethargus; with Cases. By* ROBERT CLARK, ESQ., *Surgeon, Civil Service, Colony of Sierra Leone.*

THE attention of the medical profession was, I believe, first directed by Dr Winterbottom, to the frequency and often fatal termination of the disease termed "lethargus" on the western coast of Africa; but the description given in his work, both of the symptoms and mode of treatment, is much too meagre for practical purposes. As deductions leading to a sound and rational mode of treatment can alone be drawn from an attentive, patient, and minute investigation of the pathological appearances presented, the following cases and observations, with the pathology of this most interesting disease, founded upon my own experience as surgeon to the liberated African hospital at Kissy in the colony of Sierra Leone, will not, I trust, be uninteresting.

Dr Mason Good, in his work upon the study of medicine, has placed this disease in the class "neurotica;" but as developed in the cases which came under my notice, I think that it

may be classed under the variety "cataphora," or short remission lethargy.

Causes.—Lost balance of circulation, inducing irregular distribution of blood and venous congestion; depressing mental emotions; severe bodily labour; unwholesome scanty diet; repelled eruptions; suppressed evacuations; perhaps functional derangement of the nervous system, producing insufficient action or energy to resist the approach of sleep, even without its concomitant exciting causes.

Symptoms.—On the first approach of the disease the patient is observed to become fat, the demand for food being inordinate; when it has, however, existed for some time, the appetite declines, and in the latter stages the patient emaciates;—there is uncontrollable desire to sleep, the patient often falling asleep in the act of conveying food to his mouth;—sometimes squinting and convulsions may be observed; the glands of the neck become tumefied, but this is by no means always present.

The negroes call this disease sleepy dropsy, and after it has advanced, never attempt its cure, giving over the patient as incurable; but in the first stages, they attempt its removal by inducing copious perspiration.

Some European doctors, conceiving the disease to be induced by debility, have administered various stimulants, such as camphor, musk, valerian, blisters, sternutatories, metallic tonics, (as sulphate of zinc,) and the powerful agent, galvanism, has also been employed. Others, I imagine with more propriety, have viewed the disease as originating in congestion of the brain, and have sought its cure in the employment of local depletory measures, and by keeping up an action of the bowels; but it appears to me that medical men have been deterred from the judicious employment of general bleeding by an unfounded apprehension of danger from debility; nor does it appear that the potent remedy, mercury, has ever been called to exert its powerful influence in equalising the circulation:—indeed, the practice I imagine to be novel. An esteemed and experienced friend of mine, holding the chief civil medical appointment in this colony, has informed me that he has repeatedly tried it with a view to induce ptyalism, but without effect. Another medical friend of long standing and experience in the colony told me that he had treated the disease repeatedly, using blisters and drastic purgatives; but neither of these gentlemen appear to me to have sufficiently appreciated mercury. Dr Bacon, a gentleman practising at Cape Mesurado, the American settlement on this coast, remarked to me that the disease is of frequent occurrence there, accompanied in its progress by a low type of typhoid fever, but this I have never observed in any of the cases which

have come under my notice. Dr Winterbottom observes that the slaves from the Bight of Benin are the most subject to it, and that it prevails much among the Foulaho. I have observed it also equally to prevail among the several tribes inhabiting parts of the continent far inland. I have chiefly seen it among the liberated Africans, of whom there are sometimes from 400 to 500 at one time in the hospital under my charge, and I have been informed that several cases have occurred even among the creole inhabitants.

Case 1. On the 7th April 1839, Mary Coker, aged 14, an apprentice from Waterloo village, a native of Benin, was admitted to hospital. States, that about three months ago she was attacked by sleepy dropsy, (the country name for lethargus,) for which she was treated by the natives, but without mitigation or the slightest alleviation of the symptoms. She is of a stout plethoric habit of body; her general appearance is that of an individual roused from sleep, the face and eyes being devoid of animation, almost of expression; wears a besotted look; the skin is dry and above the natural temperature; pulse 108 and small; bowels costive; the tongue is clean about the tip, but towards the root and in the middle coated with a greyish fur; during the day she continues drowsy, and falls asleep while taking food.

Apply a blister, 7 × 4 inches, from occipital protuberance along the spine.

℞. Ext. colocynth comp.
Submur. hydrarg. ā ā gr. xij.
Divide in pil. vj.

One every two hours until the bowels are fully opened.

8th. Bowels open; alvine evacuations natural. During the night she removed the blister, which had partially risen. The skin is cool. Reapply blister.

℞. Calomelanos ℈j.
Pulv. ipecac. gr. ix.
Pulv. opii. gr. ij. Misce.

Divide in pil. vj. One of the pills every three hours.

9th. The blister has risen well; bowels opened once; a lumbricus about eight inches long discharged; the urine is secreted sparingly, and is highly coloured, but does not coagulate on application of heat; skin of natural temperature.

10th. The mouth has become affected with the mercury; her bowels have been twice opened; micturated once in the space of 36 hours; the same lethargy oppresses and weighs down both her physical and intellectual faculties; pulse 94, small and quick.

Let the mouth be gargled with a solution of an ounce of salt in fifteen of water.

11th. No change.

12*th*. Considerable amendment in appearance, which is more lively than since her admission. Bowels have been severely purged; appetite good. With a view to keep up a brisk action from the intestinal tube, I prescribed as follows:—

R. Aloe. socot.
Extr. colocynth. comp.
Calomelanos ā ā gr. xij. Misce.
Divide in pil. vj. One every three hours.
Continue the wash for the mouth.

14*th*. Vast quantities of feces have been discharged by stool, dark coloured, highly offensive and stringy, as if from the tenacity of intermixed bile. During the night she was buried in the most profound sleep; pulse 112, small and quick; tongue much loaded at base; the secretion from the kidneys is sparing, and on application of heat, a film of albuminous-like coagulum floated on the surface of the urine. The appetite is good. There is some distension of abdomen, as if from flatus.

R. Bitart. potassæ, ʒi.
Aquae font. ℔ij. Solve.
To have this ad libitum. To discontinue pills.
R. Sulph. magn. ʒij.
Aquae font. ℔ij. Solve.
A wine glassful every four or five hours until the bowels are opened.

16*th*. Bowels freely open; says she feels less inclination to sleep. About half a pint of slightly turbid urine passed in the course of the twenty-four hours.

18*th*. Pulse 120, quick but small; appetite good; tongue clean round the edges and at tip, but the base is covered with grey sordes. Her general appearance is more lively than on previous days.

19*th*. Bowels open, but evacuation sticky. During the day she walks about the yard and ward, occasionally conversing with girls of her own age, but more frequently mopes about without noticing surrounding objects. She has never been observed to laugh since her admission, and often drops asleep after very slight exertion. She has continued to use the solution of the bitartrate of potassa, and, as a purgative, a solution of sulphate of magnesia.

Continue wash for mouth. The diet to consist of soup, with arrow-root, or well-boiled sago, and a small quantity of wine.

20*th*.—Several lumbrici, from eight to nine inches in length, were found in the alvine evacuation.

R. Ol. ricini.
Ol, terebinth, ā ā ℥ss.
Sp. pimentæ, ʒi. Misce.

21*st*.—She is greatly emaciated; bowels well opened by medicine. Pulse 118, small and quick.

R. Sulph. quininæ gr. vj.
Infus. quassiæ ʒiij.
Sp. vin. rect. ʒi. Misce et solve.

A wine glassful three times a-day.

The mouth and gums being still tender and spongy, continue wash for mouth.

22*d*. A lumbricus came away, with evacuation, this morning.

The irresistible disposition to sleep cannot be better described than by noticing the fact of her dozing at the moment I was noting her case, although aroused the instant before to put some questions to her. The urine is still secreted very sparingly.

R. Ol. terebinth.
Sol. gum arabic ā ā ʒi. Misce.

To be taken immediately.

26*th*. On the 23d she passed a lumbricus. The bowels have been opened two or three times daily. Tongue clean at tip and round edges, but towards the root loaded with a greyish coating; pulse 100, small and quick. No improvement of lethargic symptoms. When dozing, I have repeatedly held a candle to the eye; the pupil remained fixed and staring. About the epigastrium there is distension, but no sense of pain is experienced on pressure. The call to pass urine is seldom oftener than three times in the course of thirty-six hours.

Apply a blister, 5 × 4, to the epigastric region. Continue the infusion of quassia, and sulphate of quinine. Her strength to be supported with light nourishing food.

27*th*. She appears better. During the night, she attends to the calls of nature, while formerly the evacuations frequently passed involuntarily. The quantity of urine is now considerably increased, amounting to eleven ounces in three hours.

28*th*. Has removed blister from abdomen; appears lively. The bowels to be kept open by the following:—

R. Submur. hydrarg.
Ext. colocynth comp. ā ā gr. iv. Misce.

Divide in pil. ij. One to be taken immediately, and the other six hours thereafter, if the bowels are not previously acted upon. Let the blister be reapplied.

29*th*.—Blister has risen well. Pulse 116. Continue the infusion of quassia with sulphate of quinine.

May 2*d*. Alvine evacuations more natural. The feet and legs slightly œdematous.

The feet and legs to be rubbed with the soap liniment, and then bandaged from the toes to the knees.

4*th*. General appearance bad; alvine evacuations bilious,

and mixed with frothy-like mucus, with quantities of undigested food contained therein; drowsiness evidently on the increase.

5th. To-day she was asleep when I entered the ward. On light being brought close to the pupil, it remained uncontracted.

6th. No change.

7th. Pulse full, 106; breath is highly fœtid; general aspect improved; has, however, slight dyspnœa, attended with cough, and complains of pain under left breast. On applying the ear to the chest, the respiratory murmur was distinctly crepitous; the feeling of hardness about the epigastrium has disappeared.

Apply a blister, 4 × 4, to the chest.

R. Tinct. camph. comp. ℥iv.
Antim. tart. gr. ij.
Aquæ font. ℥viij. Misce.

A table spoonful every three hours.

8th. To-day the blister has risen well; she appears, however, weak; no expectoration; breath extremely fœtid; pulse 120.

9th. Before visiting hour, I was told by the matron that she was dying; and at 7 o'clock A.M. she expired.

Autopsy, two and a half hours after death. Body not much emaciated.

Head.—Arachnoid membrane thickened, firm, and opaque; substance of brain, when cut into, was closely dotted over with blood-vessels. About one drachm of serum was present in the lateral ventricles, and at the base of the brain half an ounce of the same fluid was effused.

Thorax.—There was some effusion in the pleura of the right side, which was thickened and highly vascular; lung of same side had a dark and florid aspect; a gangrenously fœtid and melanotic-like fluid covered a great portion of the inferior and middle lobes; the inferior lobe slightly adhered to the diaphragm. A pretty large collection of purulent matter, intolerably offensive, was found on that portion of the diaphragm where adhesion existed; the corresponding surface, to the extent of an inch and a half, was of a dark colour, evidently from infiltration and inflammation.

Heart—of the natural size. On laying open its cavities, a large portion of coagulated lymph was found filling up the ventricles, and passing into the arterial tubes. There was considerable deposition of fat on its parietes.

Abdomen.—The peritoneum was pulpy, and crowded with small blood-vessels containing florid blood; omentum contracted, having a considerable accumulation of adipose tissue; the stomach, at its greatest curvature, had a blush of redness, and a lumbricus[1] was found in its cavity, measuring eleven inches in length; the contents

[1] These parasitical intruders were found alive after removal from the body.

of the upper portion of the intestines were dark-coloured and semi-fluid; fecal matters of similar colour were found in the colon; patches of ulceration were discovered in both the great and small portions of the tube; lumbrici, varying from two and a half to eleven inches in length, occupied the canal, and were situated both in the duodenum, ileum, and colon. *Liver.*—Gall-bladder green externally, and impacted with very green ropy bile; otherwise healthy. Weight of liver, 2 lb. 2 oz. *Kidneys*—Healthy. Coats of *bladder* thickened and contracted. On laying open the *spinal canal*, a good deal of blood was found effused at the inferior cervical and dorsal regions; the neurilema of the cord had a yellowish-like lymph deposited on its surface,—which appearance could be observed more especially towards its termination. On carefully removing the sheath, a beautiful net-work of vessels was seen ramified throughout the whole length of the cord.

Case 2.—Sara, a fine intelligent lively boy, aged 10, a native of Soosoo nation, was received into hospital on the 17th April 1839, from on board the Portuguese schooner "Labradore," affected with glandular swellings of both sides of the neck, for which he was treated with iodine ointment,—to which treatment they yielded. Bowels regulated by gentle purgatives. A few weeks thereafter, he began to lose flesh, his appetite at the same time declining. On the 2d of May, he was first observed to drop asleep while eating. On being roused, he was seized with an universal tremor, the motions of his head resembling the symptoms produced by inebriation. The eyes were bloodshot, the pupils staring; the countenance meagre and emaciated; bowels costive; tongue white and loaded; pulse 84; skin below natural temperature.

Applicentur hirud. xxx. temporibus.

Bleeding to be encouraged as much as possible by flannel cloths dipped in warm water, then wrung and applied as hot as possible.

R. Spir. vini. rect. ℥iij.
Aquae font. ℔ij. Misce.

The head to be kept constantly wetted, by means of pledgets moistened with the lotion.

Apply a blister, 6 × 6, from occipital protuberance along the spine.

R. Pulv. jalapæ gr. x.
Calomelanos gr. iv. Misce.
To be taken immediately.

These active measures, with repeated large doses of oil of turpentine, (which certainly brought several worms away,) conjoined, and the production of salivation, with the occasional use of the sulphate of quinine combined with infusion of quassia, alleviated, although they failed to arrest, the progress of the malady, which terminated fatally on the 12th of June.

Post-mortem examination, two hours after death. Body much emaciated.

Head.—The skull-cap was with great difficulty torn from the dura mater, to which it firmly adhered round the corona; about 4 oz. of blood mixed with serous fluid escaped on its removal. The skull itself appeared more than usually dense; there was minute injection of the arachnoid membrane, and great engorgement of the vessels distributed over the convolutions; the grey substance of the brain was of a rather paler colour than natural; choroid plexus pale; serosity between the convolutions; the ganglions of grey substance, the corpora striata and optic thalami were softened. In the ventricles, a small quantity of fluid was present; the principal arteries at the base of the brain were enlarged and turgid.

Thorax.—A good deal of serum was found between the pleura on opening the thorax; the inferior lobe of the left lung was found to adhere to the superior surface of the diaphragm, to the extent of a half crown piece, where a yellowish exudation was abundantly poured out, and which was discovered to exist in considerable quantity about the root of the lung; its surface was rose-coloured, from excessive congestion. On being cut into, a reddish-like fluid oozed from every part of it. The right lung was also much engorged; pericardium collapsed; heart much loaded with fatty deposit, but of natural size.

Abdomen.—The stomach was highly vascular between its great curvature and the pylorus; the intestines presented very considerable traces of inflammation in some points; spleen slightly enlarged; several lumbrici were present in the small intestines; liver healthy; gall-bladder filled with dark-green bile; peritoneum exceedingly vascular; cortical substance of kidneys highly injected.

On sawing and chiselling out the vertebral column to its termination, a considerable quantity of blood was found effused over the cervical and dorsal aspects. Blood-vessels filled with blood were seen everywhere ramified in an exceedingly beautiful congeries of net-work over the cord.

CASE 3.—John Silver, a liberated African of the Ackoo tribe, aged fourteen, was sent to hospital on the 9th of June 1839, affected with lethargus, with which he was first attacked about three months previous to admission. When seen by me, he lay upon his back in a state of stupor; pulse 90, and full. On application of light to the pupil, it remained uncontracted; being roused, he articulated with difficulty; he complained that he felt pain at the lumbo-sacral junction; expression of countenance stupid and vacant, the eye is bloodshot and listless; bowels open; tongue moist, clean at tip, but at base covered with grey sordes; respiration natural; skin of natural temperature; slight rigidity of muscles of arm, accompanied by spasmodic motion of the

fingers, with occasional slight jactatory motion of the body; feet cold; says he passed several lumbrici prior to admission; states that he has not made water for many hours previous to admission.

To be cupped over the portion of spine complained of; the head to be shaved, and a blister applied thereto, so as to cover the scalp,

R. pulv. jalapæ, gr. x.
Calomel, gr. v. Misce.
To be taken immediately.

Let his strength be supported with thin soup, arrow-root, and adgedea, to which he is extremely partial.

Evening.—In the same profound coma; pulse 104, and full; skin hot; medicine has not operated. Flannel cloths to be immersed in boiling water, and applied to the feet and around the ankles; but although the application had the immediate effect of rousing him, the relief was not permanent. The skin was slightly vesicated by the high temperature.

R. ol. terebinth. ℥i.
Mucil. gum arabic. ℥ss. Fiat haustus.
To be taken immediately.

June 10th. During the night he lay on his back, from which posture he did not move; blister applied to head had risen well; 7 lumbrici, varying in length from $4\frac{3}{4}$ to 11 inches, were evacuated; the feces were of a dark-green colour, being intermixed with a considerable quantity of mucus; in the course of 12 hours, five ounces of urine of a very high colour were passed; pain in back gone; complains of pain about the left trochanter major, where there is some slight swelling.

R. Submur. hydrarg. ℈j.
Pulv. opii. gr. vi.
Divide in pil. vj. One of the pills every hour.
Embrocation of soap and opium to thigh.

Evening.—Pulse 120, and full; skin hot; four ounces of urine of a pale yellow colour passed in the course of 8 hours. During the day he would occasionally awake and converse with boys of the same age in the ward.

R. Subcarb. potassæ, ℥ij.
Mist. camphor. ℥ij.
Antim. tart. gr. ij.
Aq. font. ℥viij. Misce.

Fiat mistura, cujus sumat cochleare magnum quaque tertia hora.

The skin to be sponged with vinegar and water; pledgets moistened with water to be constantly applied to the head; bottles of warm water to the feet.

June 11*th*. Pulse 80; skin cool; tongue clean at tip, but loaded with a grey fur towards the base; gums swollen and tender; countenance mild; articulates with difficulty, but returns appropriate answers to the interpreter; appetite improved; does not complain of pain; respiration natural; on applying the ear to the chest, the action of the heart was violent, the impulse being extended over a considerable portion. Pills to be discontinued.

R. Solut. chlorid. sodæ, ℥i.
Aq. font. ℥xx. Misce.

With this the mouth is to be repeatedly gargled; a large blister to the calf of each leg; the application of cold water to the head also to be persevered in—poured on the head from a tea-kettle; continue the mixture.

12*th*. Pulse 120; skin bedewed with a copious perspiration; blisters have risen well; at the evening visit the countenance was natural, and more lively; during the day he ate some fish, which he appeared to relish.

13*th*. Makes no complaint; pulse natural and soft; tongue white and moist; extremities cold.

Apply bottles of warm water to feet; cold applications to the head to be continued; discontinue the mixture.

14*th*. Skin cool; pulse, although quick, is regular; bowels costive.

R. Ol. terebinth. ℥i.
Mucil. gum arabic, ℥ss. Fiat haustus.

15*th*. Bowels open; has passed several lumbrici; the discharge consisted of pure bile; the bedding has a urinous smell, from involuntary discharge of urine.

June 16*th*. Urine and feces passed involuntarily; wine ordered *ad libitum*. He continued to sink, and died at two o'clock A.M. of the 17th.

Post-mortem examination, five hours after death. Emaciation considerable.

Head.—The calvarium and dura mater being removed, the blood-vessels passing between the dura mater and brain were found enlarged to the size of a crow-quill; retiform injection of the pia mater; a little serosity between the membranes. On slicing the brain, many bloody points were discovered closely congregated, both on the medullary and cortical substances, the investing membranes of the ventricles were highly vascular; nothing particular was found in the cerebellum; the spinal marrow was not examined.

Thorax.—The lungs were slightly congested, and of a rose colour; deposited on the inner and inferior aspect of the left lung there was considerable effusion of yellowish lymph. The heart

was enlarged,—its walls were thickened and loaded with fat; fibrous clots werefound in the auricular and ventricular cavities.

Abdomen.—The stomach at its upper curvature was highly vascular; the omentum was loaded with fat, having its vessels highly injected with blood; the liver, on being cut into, was found turgid with blood; the gall-bladder was loaded with dark-green bile, similar to what had passed by stool; the intestinal canal contained the same coloured fluid, with here and there hardened scybalæ; four worms, from 4 to 12 inches in length, were also found; the spleen was of middling consistence, between the state of health and degeneration; the blood-vessels of the kidneys were completely gorged with blood; the bladder was contracted.

Case 4.—Thomas Caperhill, a Creole boy, aged 14, was admitted into hospital on the evening of the 6th July 1839, affected with decided and far advanced symptoms of lethargus. I was informed by the person who brought him to the hospital that he was an orphan, his parents having died about six years ago, leaving him to the tender mercies of an individual residing at the village of Wellington, by whom he had been employed to cultivate his farm on the banks of the Quia River, at a distance from the residence of his assumed protector. From the same source I learned that he had been attacked by the disease about five weeks prior to admission, and that no remedial means had been employed to check the progress. When seen by me, he lay upon his back in deep sleep; the expression of his countenance was fatuous; skin rather hot; pulse small and irregular; his tongue, (which he was got with difficulty to protrude,) was covered at its base with grey sordes; bowels costive; respiration slightly crepitous; the impulse of the heart was heard over a large space; pupils contracted; articulation indistinct and hesitating; spasmodic rigidity of upper extremities; feet cold.

Let the head be immediately shaved, and kept constantly wetted with cold lotion, pouring at intervals a stream of cold water over it. Apply blisters to the calfs of the legs; and boiling water, by means of flannel cloths, to the feet and ankles.

This application roused him, but the benefit was not permanent.

Ol. Tiglii, gtt. i.
R. Calomel. gr. iv. Misce.
Fiat. Pil. i.
To be taken immediately.

Bottles of hot water to feet and legs. Let his strength be supported with arrow-root given at short intervals.

July 7th. The blisters have risen well. Bowels open, the stools consisting of hard and dark-coloured feces. Reclines on his back; pulse small, weak, and intermitting; urine discharged involun-

tarily; the skin around feet and ankles is slightly vesicated, the result of application of hot flannel cloths; extremities cold. Let the feet and ankles be dressed with

R. Ol. Lini.
Aquæ Calc. āā. ʒiij. Misce.

Continue cold lotion to head. Apply warmth to the extremities, by means of bottles of hot water. Wine to be allowed at short intervals. During the night he expired.

Post-mortem examination, two hours and a half after death.

Head.—The skull-cap was with much difficulty separated from the dura mater. A very large portion adhered firmly to the calvarium, so as to be removed along with it; engorgement of the vessels which ramify on the convolutions; general injection of the arachnoid, which was red, and thicker than natural; both cortical and cineritious substances very red. A small hard tumour, of an oval shape, and of a dark ash colour, was attached to the choroid plexus of the left side; there were several ecchymosed spots on the lateral parts of the middle lobes. On the internal and external sides of the olfactory groove of the left hemisphere there was considerable *ramollissement;* the vessels ramifying on the circumvolutions of the cerebellum were engorged; the spinal cord was much congested; and its investing membrane was of a rose colour.

Thorax.—The lungs were of a light rose colour, and congested everywhere with dark blood; the heart was filled with very dark blood.

Abdomen.—The omentum was loaded with fat; minute injection of the peritoneum; liver much gorged; gall-bladder filled with very dark tarry-like bile; intestines contained matter of a very dark green colour, mixed at the lower portion with hardened scybalæ; several lumbrici were also found among their contents; at the upper third of the jejunum there was an ecchymosed spot, about the size of a crown piece; the kidneys were much loaded with fat, and the cortical substance was engorged.

Autopsy of a boy of the Bacongo tribe, aged 16, *who died fourteen days after admission to the hospital,* but whose case I did not note down.

Head.—The calvarium being removed, a great quantity of very dark blood escaped. The dura mater was infiltrated with some fluid which ablution failed to remove; glandulæ Pachioni enlarged; effusion of lymph over arachnoid membrane. On slicing the brain, streaks of blood were observable. The ventricles were filled with bloody serum; the choroid plexuses were turgid, small vesicles appearing on their structure. Over the corpora striata, blood-vessels ramified in an arborescent form; the circle of Willis was well marked, from the great turgidity of the vessels;

a netting of blood-vessels was stretched over the pons Varolii; the cerebellum and its coverings were equally congested.

Thorax.—On opening the thorax, both lungs were found engorged; there were considerable adhesions to the pleura costalis; the pericardium was collapsed; the heart was enlarged, its walls being thickened. On making a section through the right ventricle, fibrinous clots 3½ inches in length were discovered, of very dark-coloured blood; coagula filled the auricles.

Abdomen.—On opening the abdomen, the liver was found enlarged, and of a purple tint, some parts of its structure being infiltrated with bile. The gall-bladder was distended with bile of a tar-like consistence and colour. The omentum was contracted and thickened, and tinged of a yellow hue. The stomach contained a glairy fluid, the mucous coat being dotted over with grumous coagula. The duodenum was also much studded. The intestines being removed from the body, washed, and slit open, were found filled with lumbrici and hardened scybalæ; the spleen was softened; the kidneys were normal; bladder thickened and distended with urine.

Addenda.—In the case of a boy aged 14, of the Akoo tribe, who was admitted to the hospital on the 2d September 1839, and who had been ill for six weeks prior to admission, dissection revealed sanguineous infiltration of the cerebral substance, thickening of the dura mater, and several spots of a black colour scattered over its structure, along the course of the longitudinal sinus; it was marked of a brownish-blue colour; the lungs contained tubercles in their first stage. Hypertrophy of walls of the heart: several lumbrici were found in the intestinal canal at its upper portion. Dr Copland, in part ii. section 25, page 345 of his valuable Dictionary, observes that in the dark races of men, worms, especially lumbrici in the intestinal canal, are frequently connected with the origin of many maladies of remote, but related organs. Affections of the stomach, diarrhœa, &c. &c., may very often arise from this cause. These parasites, it will be noticed, were found to be present in great numbers, both during and after life in these cases.

In conclusion, I hope it will be conceded, that if the practice pursued in those cases proved unsuccessful, that circumstance may with propriety be accounted for from the advanced stage to which the disease had proceeded prior to its being submitted to medical treatment.

Appendix.—In Mary Cocker's case, the right lung weighed 14½ oz.; left lung, 50½;—the weight of the brain was 3 ℔ avoirdupois, that of the liver 2¾ ℔, and that of the spleen, 9 oz.

ARTICLE II.—*Case of Tubarian Gestation, with Rupture of the Cyst containing the Embryo, and Fatal Hemorrhage into the Peritoneum.* *By* R. M. GLOVER, M.D. Edin., *Newcastle-on-Tyne.* (With a plate.)

The subject of this case was aged 39, of stout habit of body; she had been married for the second time for three months. Since her marriage she had not menstruated, though previously her menstruation was regular. During her first marriage she had three miscarriages, but never bore a viable child.

On the 30th of November last, she was seen by Mr Dixon of Gateshead; she then complained of bearing-down pains in the back and abdomen, especially in the former seat, with slight bloody discharge from the vagina. On examination per vaginam, the lips of the uterus were found rather tumefied, but close. The pulse was little affected, and the tongue clean. A gentle aperient and an anodyne draught were prescribed. The bowels were in consequence gently opened, and the pains ceased.

Next day about the same time, *i. e.*, in the afternoon, she had a similar attack, when the same treatment was renewed with equal success. This time, a few fibrinous shreds were passed along with the bloody discharge. The bloody discharge was very slight, and the shreds, as described, lightly pressed together, would not make up the size of a small nut.

On the morning of the 2d of December, the patient appeared well, and got up to cook dinner for the household; this was before noon. A sense of uneasiness caused her to go to bed about noon. About 3 P.M. she was suddenly attacked with severe, nay, excruciating pain in the lower part of the abdomen. She was then alone in the house, and her shrieks were unattended to for half an hour, when she succeeded in procuring assistance, and Mr Dixon was again sent for.

At 4 P.M. he found his patient in a state of collapse; her extremities cold; rigors; the pain in the bowels continuing; the lower part of the abdomen excessively painful on pressure. The pulse was scarcely perceptible, and apparently but little quickened, about 80; the tongue continued clean. An examination per vaginam was again made, and the lips of the uterus were found less tumefied. A draught of laudanum and ether was ordered.

I saw the case in consultation with Mr Dixon shortly before eight o'clock. Previously to this she had severe vomiting, a watery fluid being ejected from the stomach with great force. Her state was generally as has just been described. The abdomen was everywhere painful on pressure, especially inferiorly, where it had a doughy feel. Superiorly, there was some degree of tym-

panitis. Great pain was especially felt over the iliac fossæ. There was now no discharge from the vagina. The pupils were dilated, and the patient in a state of partial stupor.

Amidst the difficulties with which the case was invested, we determined to treat it as for peritonitis. Turpentine injections were ordered, and sixteen leeches to the abdomen over the seat of pain; a bolus of twelve grains of camphor, and two of opium were directed to be taken immediately.

She continued in the same state during the night. At 12 o'clock she had a draught containing nitrous ether and ammonia; and this was repeated several times during the night. In the night-time she had three turpentine injections, and her bowels were freely moved. Towards morning there was repeated vomiting, and again a watery fluid was ejected with great force.

The symptoms of depression continued to augment, she lay during the next day in a state of insensibility, and died at 6 P.M.

Autopsy.—An inspection of the body was made forty hours after death by Mr Dixon and myself.

No external sign of pregnancy was observed.

On opening the peritoneum, a large clot was perceptible, occupying the space from the umbilicus in front downwards into the pelvis. The transverse colon distended with flatus, exhibited several patches of inflammation on its peritoneal coat; and on opening the intestine, the mucous membrane was observed in some parts reddened opposite these external marks. The same was observed in many parts of the small intestines. The pelvis and iliac regions, and posterior part of the abdomen contained a quantity of dark-coloured fluid blood, which we estimated at two pounds; while the clot we conceived might weigh three-quarters of a pound. The peritoneum lining the inferior and posterior parts of the abdomen, and the pelvis, exhibited an intense redness, which appeared to arise partly from increased vascularity, but chiefly from coloration by contact with the effused blood. A careful examination of the interior of the peritoneum was made by the hand, and with the light of a candle, with the view of detecting some ruptured vessel, the cause of the hemorrhage; but in vain. However, a sac of the size of a walnut was found where the left Fallopian tube joined the uterus; its interior surface communicated with the peritoneum by an irregular shaggy opening, and by adherent clots, which could be pulled from openings resembling those of veins. The uterus and its appendages were carefully secured; but the further inspection of the body was prevented by the impatience of the relations of the deceased who were present.

The uterus and its appendages were examined by me, with the valuable assistance of Dr Embleton, the lecturer on anatomy in our medical school.

The uterus was somewhat enlarged, and its lips slightly tumefied; and on being opened, was found to be lined by the decidua, apparently of very recent formation, to within three or four lines of its orifice. This membrane was red, of a nearly uniform tinge, soft and spongy, and terminated towards the mouth of the uterus by a somewhat elevated margin, which may be described as composed of striæ. The point of the scalpel pushed through the decidua, and slightly moved, gave the sensation to the hand of a firmly resisting body beneath, at the depth of half a line or less. Air could be injected from the right Fallopian tube into the uterus, but not from that of the left side, nor from the uterus into the cyst already alluded to. The left Fallopian tube was clearly connected with this cyst, although impervious about four lines above it. The cyst has been already sufficiently described.

The left ovary was much shrunk, and a hydatid was observed attached to it. On its outer surface was a recent cicatrix, in which a minute dark clot could be observed. Near this, on section, two corpora lutea could be observed. The ovarian extremity of the left Fallopian tube was very open, and beautifully fimbriated.

The right ovary, laid open, showed two corpora lutea, and several Graafian vesicles. A cell was observable in the neck of the uterus. Notwithstanding that the embryo was not found in this case, being probably in the huge clot described, there cannot be a doubt entertained I think of the nature of the case; and this being granted, the chief remarkable circumstance with regard to it is the *early period* of gestation at which rupture of the sac took place.

In general, rupture of the sac in cases of tubarian pregnancy takes place towards the third month. This is the statement of Baudelocque,[1] and is corroborated by a case related by an old authority, De Graaf,[2] and by a very modern one, Dr Fairbairn, the narrator of a very recent case of the kind.[3] From the size of the sac in the present case, and the absence of marked symptoms of pregnancy, together with the recent formation of the decidua and state of the uterus, I should not be inclined to consider the pregnancy as more advanced than three weeks. All the symptoms of such cases, with confirmation of the great effusion of blood that occurs in them, will be found described in these authors, also by Capuron,[4] and doubtless by other writers. It is not my intention to enter into the literature of the subject; but I should be inclined to conjecture that parallel cases are

[1] Art des Accouchements, t. 2, p. 450,–52, fourth edition.
[2] See his explanation of the Tabula Vigesima Prima, in the work De Mulierum Organis.
[3] MONTHLY JOURNAL OF MED. SCIENCE for 1842, p. 197.
[4] Cours Théorique et Pratique des Accouchements, t. 2, p. 678, second edition.

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Tubarian Gestation.

more frequent than is supposed. A practitioner in this neighbourhood described to me a case of the kind which occurred to him four years ago. In his case also the fœtus had apparently attained the third or fourth month of gestation.

Explanation of the Plate.

The anterior view of the uterus is represented; a transverse section is made of the left portion, besides the general section, and a portion of uterus reflected and reversed, in order to show the decidua as described. 1. Is the sac; 2. The left Fallopian tube; 3. The recent cicatrix on the left ovary; 4. The hydatid; 5. The cell in the neck of the uterus.—The appearances on section of the right ovary are sufficiently clear.

Article III.—*Contributions to the Statistics of Midwifery, from private practice.* *By* Robert Hood, M.D. Edin., *and Licentiate of the R.C.S., Edin.*

The population amongst whom the following practice occurred occupies the extreme east of Berwickshire, and is chiefly agricultural, or depending upon the soil for employment. In the village of Ayton there are no manufactures. In Coldingham a considerable proportion of the inhabitants are weavers, employed in the Glasgow trade; and in Eyemouth, most of the inhabitants are fishers; and fishing is followed by the whole of two small villages along the sea-coast. The amount of the population of each of the above-mentioned villages is under 1000. The country around is sprinkled over with farm-steadings and small hamlets. Without pretending to great accuracy, I should suppose that the village population preponderates over the strictly rural. The general character of the whole is, that they are cleanly, sober, and industrious.

From the proximity to the German Ocean, coupled with a moderate elevation, the winters are mild; but on account of the former, the springs are bleak and cold, which ungenial weather continues sometimes almost into midsummer. The country, except in the vicinity of Ayton, is very free of wood. The whole, with the exception of the elevated moors of Coldingham and Lamberton, is in a high state of cultivation.

From the commencement of my practice in Ayton, in February 1818, up to April 1832, a regular list of women delivered has been kept; and, with the exception of the first thirty-seven, the sex of the children has been distinguished. In all, the several hours of attendance upon each, cases of twins, presentations, &c., have been carefully marked, and are exhibited in the fol-

lowing table :—Number of women delivered 824; average length of attendance, four hours; males, 411; females, 385; total, 796. Twins, 9 pair; unmarked, 37; still-born, 35; deformed, 8; premature births, 14; protracted gestation, 2. Of the still-born, one was born in the fifth month; three in the sixth; six in the seventh; one in the eighth; and one in the eleventh.

The deformed were as follows :—Two were born with club-feet, one of them with both feet thus deformed; one was born with deficient upper extremities, and was dead; one was born with water in the head, and also dead; two others were also still-born and mal-formed; two wanted the upper part of the head, one of them still-born.

The premature births were as follows :—Fifth month, one; sixth month, three; seventh month, nine; eighth month, one. Two were born in what was considered by the mothers to be the eleventh month. One of them wanted the upper part of the head across by the eyebrows, and was still-born, but had not been dead for any length of time. (The other that was born with a similar deformity lived for several days.) The other was perfect. Both of the mothers were fully satisfied that they had gone eleven months, and both of them had had children previously. They were respectable, rational women. The perfect child was remarkably stout, and had a very firm mottled skin.

Of those that were still-born at the full time, there were three delivered with the crotchet and one with the forceps, which last had its head much distended with dropsy; four were turned; six had cord presentations; two presented their vertex; one with the deformity of the head already mentioned; one had a face presentation; there was another not ascertained; there were also two twins;—total, twenty-three. To this list of still-born at the full time are to be added eleven, born out of the usual time; one in the fifth, three in the sixth, six in the seventh, and one in the eighth month.

The presentations were as under :—Vertex, 797; anterior bregma, 10; breech and feet, 9; face, 5; shoulder, 1; arms, 4, 2 of them with cord; cord, 6, 3 of them with vertex; placenta, 1;—total, 833. There probably should be a few deducted from vertex, as several were over before my arrival, but they were in general ascertained.

Out of the total 833, there were,—of natural births, 812; with crotchet, 3; forceps, 8; turned, 10.

The crotchet was never had recourse to without the advice of another practitioner. The first was a first child, and occurred early in my practice, and was left entirely to the experienced practitioner called in. The second was also a first child, and happened several years afterwards, and this last resource was not applied to, until many fruitless attempts were made with the for-

ceps, and ultimately waiting until danger was apprehended to the mother. The first did not afterwards become pregnant, but the second had several natural labours subsequently, and did not seem strait in the passages. Had we been able to obtain larger forceps, in great probability she might have been delivered with them. Both of the mothers recovered perfectly. The third occurred in a woman with strait passages. She had borne a considerable family, and I had been twice with her before, in natural labours; but the children were small, and were expelled by exceedingly strong uterine action. She had previously, however, been delivered with the crotchet. In the present instance she had unremitting cruel pains for about eighteen hours, without being able to propel the child's head sufficiently down upon the perineum, to permit the effectual application of the forceps. She recovered, but was afflicted with incontinence of urine for long afterwards. The only fatal case with the forceps was in the child with hydrocephalus. The head burst during the operation. In turning, I was generally unsuccessful in preserving the life of the child.

Fatal casualties in women:—Total deaths, five:—one died during delivery, from rupture of the uterus; one died on the fourth day, from a venereal affection and flooding; one died from peritoneal inflammation on the fifth or sixth day; one died from inanition on the second day; one died from puerperal mania. She was delivered in the 7th month.

Casualties not fatal:—Flooding, 6; hour-glass contraction, 3; adhesion of placenta, 1; inflammation of the uterus, 2; spasm of the uterus, 1; inflammation of the lungs, 1; inflammation of the peritoneum, 1;—total, 15.

In the case of the rupture of the uterus, I was called in about eight o'clock in the morning, after which labour advanced progressively and steadily until about noon, when the pains became weak. At this period the head of the child was in the passage, but scarcely pressing upon the perineum, and no change took place until about three o'clock, when, without the pains becoming the least stronger, the poor woman suddenly called out that she was taken with a violent pain in her bowels. She, at the same time, came perceptibly over the bed, without it being in my power to prevent her, although in the same apartment. Upon my laying my hand upon her bowels, an unusual tumour was distinctly felt high up in the abdomen. The child's head had also receded, so that no doubt was left of what had taken place. She was suffering severely. As soon as it was possible the presentation was pushed back, which was done without any difficulty, and the child turned, but before the head could be extracted the poor creature had sunk. It would then have required some one to hold the body until the child was forcibly withdrawn, which

none of the attendants seemed willing to do; and as there was no life felt during the turning, and the pulse of the cord had ceased to beat, under all these distressing circumstances, the child was returned. It was the woman's third pregnancy, and she had twins in the two previous cases.

The rupture, so far as I ascertained, was high up in the cervix, and the edges felt extremely thin. There was no dissection.

The next that died had her constitution destroyed with lues venerea, of which complaint the child also died some time afterward. The next had a very easy delivery of a first child, which was illegitimate. She was profusely bled on the first day and succeeding night of the attack, which seemed to subdue the inflammation; but the abdomen continued swelled, with a doughy feel; and in the afternoon of the following day the pain and fever returned, and cut her off. The next that died was the case where the placenta presented. She had one great gush of blood before my arrival. The os uteri was then scarcely begun to dilate. I waited until the next pain came, when another gush determined me to deliver her immediately. The finger first, and then gradually the whole hand, was introduced, and the os uteri dilated. The child was easily turned, and extracted with the loss of little more blood to the mother, and I anticipated a favourable recovery. She, however, was of a dissipated habit, and was likewise ill-nursed, or rather starved. She died on the second day from inanition. The last had a premature labour, but beset with no suspicious circumstance. The lochial discharge suddenly stopped, when she became raving mad, and thus died.

The cases of flooding were nearly all stopped, with more or less difficulty, by the introduction of the hand, and allowing it to remain until the uterus contracted upon it, using cold or wet cloths applied to the abdomen at the same time. One nearly proved fatal. The uterus refused to contract upon the hand,—and it was not until repeated basons of water were dashed over the abdomen that contraction was effected. Laudanum and stimulants were also administered:—and she recovered perfectly. In such cases as this, and in rupture of the uterus, it requires great firmness on the part of the practitioner, as it seldom happens that a consultation can be held, however much desired,—and a slight hesitation might prove fatal to the patient.

In the case of hour-glass contraction, there was nothing unusual.

In the case of adhesion of the placenta, the woman had a protracted recovery. The placenta had little cohesion, and came away in pieces. By the way, there once occurred to me a remarkable case of disease of the placenta, where it was very much ossified. It felt like so many loose crystals, and actually jingled when shaken. The child was at the full time, and a remarkably fine one.

Medicine used.—In my earlier practice, it was usual for me to carry a phial with laudanum; but this was latterly discontinued without disadvantage. Opiates are chiefly useful in long-continued labour, if administered at the time when the pains show an evident tendency to abate, which occurs occasionally in every stage of labour. The patient, then, by a judiciously-timed anodyne, may have an hour or two of refreshing sleep,—after which, labour pains frequently recommence with renewed vigour. Purgatives that act upon the rectum, and enemas, when necessary, should never be neglected; but they are more useful as a precautionary remedy than any benefit that is derived from them in hastening labour. The same may be said of bleeding. Patient attention, and inspiring the sufferer with hope and confidence, is more beneficial than any remedy.

The catheter was used once only, and that needlessly. Ergot was seldom used, and I cannot speak for or against it in premature labour. In promoting the contraction of the uterus after labour, it is exceeding useful.

Rupturing the membranes, as every one knows, when the os uteri is considerably dilated, speedily brings on bearing pains, although they were very weak before; but rupturing the membrane when the os uteri is hard and banded is very hurtful, in both retarding labour and producing discomfort to the woman. If by some accident, however, the membranes have become ruptured, labour may be considerably assisted by pretty strong pressure with one or two fingers on the os uteri during pains.

Among the children, there was one of doubtful sex,—so much so, that the parents unfortunately mistook a girl for a boy, and had her named accordingly. They were told at the birth that she was a girl, but they thought I was mistaken. About three years afterwards, the mother brought her to me to be examined. She had a penis-like clitoris,—imperforate, the urethra opening at its base. The vulvæ were very large, and had a considerable resemblance to a scrotum, being only separated by a fissure. I was once consulted about a girl with imperforate vagina. She was seven or eight years old, and had all the external parts perfect:—but the hymen covered the opening of the vagina:—when divided, the passage was found natural. The membrane was rather thick, the external portion being composed of the common integument, and the internal, of mucous membrane.

ARTICLE IV.—*On the Pathology of Typhus.* *By* J. J. DRYSDALE, M.D. Edin., *Liverpool; and* J. R. RUSSELL, M.D. Edin., *Edinburgh.*

If there be one subject in medicine which has of late years been more laboured, and less advanced than any other, it is perhaps the one we are about to enter on. It would be a tedious and useless task to investigate all the different theories that have been successively invented and abandoned, to explain this fatal and common, yet obscure disease. It is sufficient for us to remark, that at present there is no one explanation which at all satisfies the great bulk of medical men, and the mistrust of any new explanation, is the natural consequence of the discovery, that the former ones were wholly insufficient. It may have been, that hitherto those who theorized were led astray, either by neglecting the study of pathological anatomy on the one hand, and basing their theories on some fancied changes in the body which they could not demonstrate; or, on the other hand, by neglecting to make a careful examination of the phenomena of the disease, and constructing their theories, not indeed on an unreal basis, but on one too narrow for its support. The latter is certainly the better side to have erred on; for although those who committed this error, may not have, any more than the former, satisfactorily explained the nature of the disease, yet they have at least added many valuable facts, which may lead ultimately to the discovery of the truth. We would not wish to find morbid anatomy taking the place of pathology, but unless it expose the alterations that the organism has undergone, we do not see how pathology can possibly explain these, or what security we can have for the soundness of its explanation.

The attention which the study of morbid anatomy has directed to the alterations the body undergoes in typhus, appears at first sight rather to have introduced a new element of perplexity into the question, than to have tended to advance unanimity: for while all agree, that certain appearances are constant in certain forms of the disease, nothing can be more contradictory than the opinions that prevail, as to the connection of these phenomena with the symptoms. The explanation we are about to bring forward, has at least the merit of reconciling some of these conflicting opinions, and of showing, that while many are right in so far as they go, all have hitherto stopped short of the whole truth. By those who have best described the intestinal lesion in typhus,—for this is the lesion which, being the most constant and important, has attracted the greatest attention,—the opinion has been entertained, that whether it be the cause of the symptoms or

not, it is at least quite of a specific character, wholly different from the ordinary effects of inflammation upon the part affected. This idea is frequently expressed by Louis and Chomel, who have made the disease, as it occurs in Paris, their special study. The latter gives an admirable description of the infiltration of Peyerian patches, with a peculiar substance closely resembling tubercle, but distinguished from it by certain constant characters; and so forcibly is he struck by the resemblance between the typhous and the tuberculous disease, that after minutely describing the former, he exclaims,—"Do not these facts remind us of a process just described, viz. the tuberculous?" A similar description of a peculiar substance by which the glands are infiltrated, is given by Schönlein of Berlin, (Allgemeine Pathol. 2te theil. c. 23,) who has very accurately detailed the ulcerative process which occurs in the ileum. [1]

Although these writers are inclined to the belief, that the local lesion in typhus is of a specific character, yet none boldly announced the doctrine, that the typhous product is as peculiar, and stands in the same relation to the disease, as the matter of scirrhus or the matter of tubercle does to the symptoms that respectively attend these formations; not that the symptoms are caused by the deposition of this matter or by its changes afterwards, but that the same cause that gives rise to the symptoms, gives rise also to this deposit; and that this cause is a *dyscrasia*, or general disturbance of the system, which expresses itself by giving a tendency to the deposition in certain localities, more especially in the ileum, of a substance as peculiar in its nature, and as different from the surrounding texture as the matter of scirrhus or tubercle.

For the announcement of the doctrine in this broad way, we are indebted to Professor Rokitansky of Vienna, who gives the following minute account of the typhous process, in the third vol. p. 238, *et seq.* of his "Hanbuch der Pathologischen Anatomie," which we here quote from a note, by the authors of this paper, to Fletcher's General Pathology. [2]

"I. The typhous process is characterised, in an anatomical point of view, by the deposition of a peculiar morbid product, which forthwith undergoes a distinct series of peculiar changes.

"II. The seat of this process is various, and depends upon the specific relation of the general process to certain organs. The tissues most subject to this deposition are the mucous membrane and the lymphatic glands; and, in Austria at least, where the observations were made, the mucous membrane of the ileum (ileo-typhus) is most frequently affected; but it also occurs in the bronchia and lungs (when in this seat constituting most pro-

[1] For what has been done in this country, we must refer to Mr Goodsir's paper at p. 353 of this number, of which we would recommend the perusal before proceeding with the remainder of our article.

[2] *Vide* p. 238. Edinburgh, Maclachlan, Stewart, and Co., 1842.

bably the exanthematic typhus), and also, though very rarely, in the colon (colo-typhus).

"As the changes which this product undergoes are presented in their most characteristic form in the intestines, it will be sufficient to give a more detailed account of the process as it occurs in the ileum.

"This process may be divided into four stages: 1st, The stage of congestion; 2d, The stage of deposition of the morbid product, *i.e.* typhous infiltration, which is, in respect to the degeneration, its crude stage; 3d, Stage of intumescence, softening and throwing off of the degeneration; and, 4th, Stage of proper intestinal typhous ulceration. The first stage corresponds to the period of irritation, and catarrhal and gastric symptoms. It exhibits a congested state of the vessels, or succulent condition of the mucous membrane, particularly of the villous coat, extending over the greater part of the ileum, but better marked at particular spots, especially near the cœcum. The mesenteric glands are slightly swollen, their vessels are gorged with blood, their substance soft and elastic, and their colour dark.

"In the second stage the congestion moderates to a certain degree, and is reduced to several spots corresponding to the Peyerian glands, and a few solitary follicles. Here it appears in the form of round ellictic "plaques," varying from half a line to three lines in thickness, which are formed by the deposition of a peculiar substance in the Peyerian plexus and submucous cellular tissue. On a more close examination, the degeneration is found to be so deposited in the submucous tissue of the follicles, that the deepest layer of that tissue, immediately covering the muscular coat, remains free from infiltration. It very seldom reaches beyond the bounds of the follicular apparatus.

"The mesenteric glands are now more swollen, so as to reach the size of a bean or a hazel nut, blue or greyish red, tolerably consistent, and apparently infiltrated with lardaceous substance.

"The commencement of the third stage is indicated by a return of the congestion in the ileum in a violent degree. The vessels, especially the veins, both in the mesentery, and in their ramifications in the intestines, are gorged with dark-violet viscid blood, and the tissue of the mucous membrane presents again a swollen appearance, more especially the villi, which yield a greyish-white turbid fluid on pressure.

"But the most remarkable changes take place in the typhus-plaques and mesenteric glands, which become spongy and turgescent. These changes may take place in either of the following ways. The deposit assumes the appearance of a greyish, marrow-like substance, and is then, along with the covering of the mucous membrane adhering to it, converted into a dirty yellowish-brown eschar, which, shrinking together from all sides, gradually loosens itself at the margin, splits into various directions, breaks off from the deepest stratum of the submucous cellular tissue, and is carried off all at once, or by a repeated recurrence of the process; or the deposit degenerates into a loose, vascular, blood-streaked, bluish-red, luxuriant, fungoid structure, which becomes a special source of profuse intestinal hemorrhages, and is generally thrown off piecemeal without scabbing.

"The mesenteric glands now reach their greatest volume, attaining the size of a pigeon's, and, near the cœcal valve, not unfrequently of a hen's egg. Their substance is injected, tolerably consistent, but changes into a greyish-red loose pulp, frequently presenting the appearance of evident extravasation of blood. It is then soft and elastic, or frequently gives rise to the sensation of fluctuation.

"In the fourth stage, after this deposition is thrown off, a loss of substance of the internal surface of the gut remains, which represents the proper typhous ulcer. It is unnecessary to go more into the detail of the appearance of these ulcers, which have been so frequently described, and are so well known. At this stage, the morbid product has been thrown off; the mesen-

teric glands diminish forthwith in volume by the removal of the infiltrated morbid matter; but they remain still somewhat larger than natural, and retain a reddish colour, and their increased vascularity.

"When the typhous process localizes itself in the bronchial mucous membrane, the phenomena present a considerable difference. It appears always in the form of a diffused intense congestion, with dark-coloured swelling of the membrane, and copious secretion of a gelatinous, occasionally dark, blood-streaked mucus, and is principally developed in the bronchial ramifications of the inferior lobe. It appears, therefore, in this situation to be always arrested in the stage of typhous congestion, and never comes to any manifest production of that morbid product in the tissue of the bronchial mucous membrane which is produced in such abundance in the follicular apparatus of the intestinal mucous membrane in abdominal typhus. Thus, in the primitive broncho-typhus, the general affection is localized in the bronchial mucous membrane alone, to the exclusion of all the other mucous membranes, even that of the intestines, with which the typhus process in general has the greatest affinity. In many cases, indeed, this latter exhibits a recognizable, but always subordinate, secondary affection of the follicles, in which the neighbouring mesenteric glands participate; and it would often be difficult to recognize the affection as typhus, were it not for the other attendant changes which mark the disease, viz. the peculiar engorgement of the spleen, and congestion of the pyloric extremity of the stomach, the condition of the blood, and the typhous nature of the affection in general, but more especially the change in the bronchial glands. This change is the same as that which the mesenteric glands undergo in ileo-typhus. They are swollen to the size of a pigeon or hen's egg, reddish-blue, spongy, friable, soft, and infiltrated with the peculiar typhous product.

"This form is frequently combined with pneumo-typhus and typhus-pleurisy, and is undoubtedly the pathological cause of the exanthematic contagious typhus, and most probably also of the Irish and North American typhus, which commonly run their course without abdominal affection.

"Sometimes the typhous affection of the lungs is better pronounced than that of the bronchia; but the former never occurs independently of the latter.

"Besides these primary seats of typhous deposition, it may be deposited in many other organs as a secondary formation, giving rise to many complications, which, though very interesting in a practical point of view, would lead to too much detail were we to notice them here.

"III. The typhous matter has, even at its origin, but much more in the transformations it undergoes, the greatest analogy with the cancerous degeneration, and more particularly with the medullary cancer.

"IV. The local typhous process is an inflammation, not, however, of a healthy character, but of a typhous character; and this unhealthiness is given, according to Rokitansky, by the peculiar diseased state of the blood.

"Lastly, Rokitansky is of opinion, that when the local typhus process is not met with in the mucous membrane of the intestines, or in any other of mucous membranes, it may have run its course in the blood without localizing itself at all."

This view of Rokitansky presents features quite different from the usual vague and indefinite theories of fever. He does not represent it as a simple febrile affection, with such an asthenic or adynamic type, that secretion and nutrition are impaired and depraved, simply from this weakness; but, on the contrary, that the alteration of nutrition is of a definite character, tending to the formation of a peculiar morbid product, and that it is this tendency that constitutes the essential character of the disease.

With such a view of typhus as this, resting upon such facts, let us compare the disease with the tuberculous one.

It is now pretty generally admitted, that the deposition of tubercle is preceded by a greater or less degree of inflammation. Now it is manifest that it is neither the intensity of the inflammation, nor its seat, that accounts for the occurrence of this deposition; because we have every degree of inflammation occurring in the very organs which are most liable to become the seat of the tuberculous deposit, without such a deposit taking place; and we meet with tubercles in a great variety of wholly dissimilar tissues. What the first change in the system, which gives rise to this deposit, is, we have as yet not data enough to determine; but whatever the primary change may be, the fact is admitted by all, that inflammation occurring in a person whose constitution renders him liable to be affected with tubercles, gives rise to their development, and the name scrofulous diathesis has been given to such a condition.

It is not supposed that the tubercles, either by their presence or by the changes they undergo, are the cause of all the symptoms of the tuberculous disease, for they themselves are plainly but symptoms of an anterior change; yet their presence is considered as essential to that disease.

Let us, then, fairly view the analogy between typhus and tuberculosis,[1] and mark wherein it fails.

In tuberculosis we find a certain specific substance, called tubercle, deposited as the termination of a peculiar inflammatory process. We find this deposit subsequently undergoing a series of distinct changes. We find it comparatively unassailable by those remedial measures which are considered efficacious in simple inflammatory affections of the organs affected by it. The disease depends on a peculiar degeneration of nutrition, which may affect various organs, such as the lymphatic glands, the lungs, the liver, spleen, and serous membranes, and constitutes collectively what is called the scrofulous diathesis; and the several diseases which this deposition gives rise to, such as tabes mesenterica, tumours and suppuration of the glands, white swellings, pulmonary phthisis, are to be regarded merely as forms of the scrofulous or tuberculous degeneration, cachexia, or dyscrasia. Now, while it is true that inflammation attends this deposition, as we before insisted on, it is the *peculiarity* of the character of the inflammation, and not its seat, severity, or continuance, on which depends the deposition of tubercle; and without the actual presence, or the traces of the pre-existence, of tubercle, we never could have demonstrated the nature of the peculiarity of the attendant inflammation.

[1] We adopt this name, as being the one now commonly used by German writers to express the tuberculous disease—"affection tuberculeuse" of the French.

The deposition, after it has taken place, may undergo a series of changes, and thus give rise to a train of secondary symptoms.

Precisely similar to all this, is what Rokitansky teaches to be the typhous process, viz. a modification of nutrition of a peculiar character, accompanied with a peculiar kind of inflammation, terminating in the deposition of a peculiar morbid product, which afterwards undergoes certain distinct and constant changes, which may give rise to certain secondary symptoms. So far, then, they agree, but in one important particular they seem to differ entirely. In tuberculosis we have generally a tedious course, always distinct local symptoms, and seldom considerable fever; while in typhus we have a rapid course, few or no local symptoms, and a great deal of fever. If now we could conceive of a variety of tuberculosis, equally rapid in its course as typhus, presenting no obvious local symptom, and attended with violent fever, it is manifest that the resemblance between this disease and typhus would be too obvious to escape notice; and were this a form of daily occurrence, there would be much more danger of our confounding it with typhus, than of our being startled at the proposal of embracing the two diseases in the same general category. Now it happens very fortunately for illustration, that such a disease does occur, and has been adverted to by some of the most recent writers under the name of acute tuberculosis, although as yet no full description of it has been given. The symptoms are so remarkable that, after having witnessed one case of it, it is impossible to forget it.

The appearances are those of the most severe forms of typhus; —great prostration of strength, dry tongue, burning skin, quick pulse, stupor amounting almost to coma, without any indication of the peculiar disease discoverable, either by the general symptoms, or by the stethoscope. The disease is always fatal, generally within 10, 12, or 14 days. It sometimes occurs as an independent affection, but more generally in the course of chronic phthisis.

The appearances on dissection are, an almost universal dissemination of tubercles, about the size of a pin's head or smaller, over the surface of the lungs, spleen, liver, kidneys, and generally also over the arachnoid membrane. They are so small that they may be easily overlooked, if particular attention be not paid to discover them. That this rapid deposition of tubercle, or the state which produces it, is the cause of all the symptoms, it would be against all the principles of modern pathology to deny, and hence the analogy is complete in every particular:—the symptoms so similar as to defy recognition, the morbid products in both peculiar and closely resembling, both diseases intractable, the one always, the other frequently fatal. There remains but one other difference of consequence between them, which is, that ty-

phus is looked upon as contagious, while tuberculosis is not. But as typhus sometimes arises without contagion, and in some forms never is contagious, and as phthisis pulmonalis is by many conceived to be sometimes contagious, this point of difference, trifling at the best, entirely disappears.

The analogy, then, is perfect, and we seem warranted, (assuming that the evidence adduced is sufficient to demonstrate the peculiarity of the deposit that is met with in typhus,) in classing that disease with others which are characterised by the deposition of a specific morbid product.

The question of any primary or secondary implication of the blood being the cause of, or essentially connected with the degeneration, does not come under consideration here, as it belongs to the more general question of—whether "diatheses" are to be referred to the state of that fluid, and would lead us into a review of the doctrines of modern humoral pathology, into which it is quite impossible to enter; but which, we would observe, present a singular contrast, in the vagueness with which they have been expounded even by the ablest pathologists, to the clear, simple, and satisfactory announcement of their opinions on other subjects, by the same writers.

We may now, following the rule of Newton,—"causas rerum naturalium non plures admitti debere, quam quæ et veræ, et earum phenomenis explicandis sufficiant,"—proceed to consider how far this view explains the phenomena, and we shall see that it both agrees with all the hitherto observed facts, and also accounts for, and reconciles the discrepant opinions on the subject.

We have before noticed two great conflicting opinions on the cause of typhus; the one is, that the disease is an essential one, —that there is no local lesion which can account for the symptoms, and that any appearances of local affection that are met with, are merely accidental complications, neither *causing* nor *characterising* the disease. The other is, that the symptoms are symptomatic of inflammation of the intestines, or some other organ. Against the first it is urged, with great force, that it is very remarkable, that in certain forms of the disease—in that form known as continental typhus—a lesion of the intestines, quite peculiar, and unlike any other, is almost the invariable attendant on the affection; and—although it may be open to question, whether the disease may exist without it,—there can be no doubt that it cannot be present without the disease. This establishes, that if it be not the pathological cause, it is at least the anatomical symptom of the disease. But again, against this being the pathological cause, it is urged with still greater force, that these local changes are not always present; that the severity of the symptoms does not correspond to their greater or less development; that the symptoms occur prior to their manifestation, and linger after their

removal; and that the principal symptoms are the same, although the seat of these changes is very various. Now, the view that Rokitansky takes, while it fully meets all the requirements of the pousers of the former opinion, is not obnoxious to the objections which those who advocate the latter urge against it. The lesion is constant, or nearly so, because the disease consists in a dyscrasia which leads to this lesion; it is quite peculiar, because it is symptomatic of a specific affection, and it evidently cannot be present without the disease likewise being present, any more than tubercle can be present without the tuberculous disease. On the other hand, as the scrofulous diathesis may be present without the formation of tubercle, so typhous dyscrasia may exist with very little, or even altogether without typhous matter. This being not the pathological cause of the disease, there is no reason why the symptoms should strictly correspond in severity with it, although they generally have some relation to it. The symptoms occurring before the deposit has taken place, is very natural, as the dyscrasia that gives rise to the tendency to the deposition, must of course precede the deposition, and can hardly be supposed to be present, without affecting the system more or less generally; and that the symptoms do not all disappear upon the removal of this deposit, is the natural consequence of the general derangement that attended its presence continuing some time after the exciting cause has ceased, or may depend on the secondary affections it produces, just as the softening of tubercle may be the proximate cause of numerous symptoms. And the inconstancy of its seat, while the symptoms are constant, is, instead of being an argument against this doctrine, strongly corroborative of it, since there is just such a modification of the symptoms at different times, as we should expect from a general, and at all times essentially identical affection, at one time localizing itself on one part, at another on some other part, and in some cases not localizing itself at all.

Besides fully corresponding to the views of those who have attempted to localize fever, in so far as they regard the importance of the local affection, and of those likewise who denied that a *simple* local lesion, so inconstant in its seat, could give rise to symptoms so constant as those of typhus, it fully explains the vacillation of some of the ablest writers on the subject, such as Cruveilhier, and even, though in a less degree, Chomel, who at one time, struck by the constancy of the local affection, propose *that* as the efficient cause of all the symptoms, and at another time anxiously retract this opinion, when the inadequacy of so small a lesion to produce such great effects forces itself upon them. *The lesion is small, but the dyscrasia which the lesion indicates is very great.*

If it be admitted as fully established that the affection known by the name of typhus on the continent, depends on a derangement of the general system which gives rise to the tendency to deposit in various organs a substance quite peculiar, and as indicative of the presence of *this* derangement, and no other, as tubercles indicate the existence of the tuberculous diathesis, we should confine the use of the term to such a condition, and not include all febrile affections characterised by an adynamic type in this vague term, typhus fever. The same principle of precision that confines the use of the word phthisis to tuberculous disease of the lung, should make us restrict the word typhus to a condition of the system which manifests itself by a disposition to deposit a peculiar morbid product just described under the name of typhous matter. We shall now proceed very shortly to consider how far these doctrines are applicable to the typhus of this country; and it is obvious, that if we make out, or render probable, that the two diseases are identical, it is quite impossible to suppose that such a disease, so peculiar, and so constant in its leading features, should not depend always upon the same fundamental pathological cause.

To the very admirable consideration of the question of the identity of the British and continental typhus, that lately appeared in a contemporary journal (*The British and Foreign Medical Review* for October 1841), we must refer those who wish fully to study the subject, and we shall content ourselves with shortly noticing the leading symptoms in both, as described by writers of acknowledged authority in the two countries. The description of the typhus of Paris we have taken from Chomel's work on that subject, and to Drs Christison (*Library of Practical Medicine*) and Henderson (*Report*, &c., *Edinburgh Medical and Surgical Journal*, No. cxli.) we have been chiefly indebted for the description of the typhus of this country.

Accession of British.—Slight languor; trivial headache; disturbed sleep; deficient appetite; inaptitude for mental or bodily exertion; pain in lower limbs; transient chilliness; soft, small, accelerated pulse; peculiar expression of countenance; not unfrequently, according to Dr Henderson, epistaxis.

Accession of Continental.—Disorder of digestive functions; peculiar expression of countenance; inaptitude for mental exertion; severe headache, pains in limbs; sleeplessness; quick, compressible pulse; very frequently epistaxis.

SYMPTOMS OF THE BRITISH TYPHUS, AS THE DISEASE ADVANCES.

1. *Head.*—Much headache, chiefly frontal; confusion of ideas; incoherent muttering; delirium; stupor; countenance dingy, flushed, languid, and oppressed; eyes suffused, intolerant of light;

buzzing or singing in the ears, frequently deafness, or preternatural acuteness of hearing.

2. *Digestive Organs.*—Tongue covered with a white, yellow, or ash-coloured viscid, adherent secretion, becoming thicker and darker as the disease advances; teeth covered with sordes; fullness of epigastrium; nausea and vomiting; bowels in some cases constipated, in others loose, the former most frequent; the urine not high coloured.

3. *Respiratory Organs.*—Respiration accelerated; slight cough attended with catarrhal rattles not uncommon.

4. *Skin.*—Typhoid eruption, most commonly composed of elliptical or circular spots, not raised above the surrounding surface.

5. *Sleep*—disturbed; the patient imagines he gets none.

6. *Organs of voluntary motion.*—General pains, especially in the back; great prostration of strength; tremors of the hands; starting of the tendons at the wrist.

7. *Blood*—Dark; coagulates loosely; (?) no buffy coat.

8. *Termination.*—To commencement of convalescence, 12 to 20 days.

9. The evidence for its terminating on critical days insufficient.

SYMPTOMS OF CONTINENTAL TYPHUS AS DISEASE ADVANCES.

1. *Head.*—Pain in the forehead; delirium of various degrees, particularly at night; great stupor; countenance expressive only of apathy and indifference; eyes suffused; frequent deafness.

2. *Digestive organs.*—Mouth imperfectly moistened, and a tough glutinous mucus covers the tongue, which afterwards becomes dry.

The tongue is occasionally red at the point and edges, with a white streak on each side. The lips are dry, and a dry mucus coats the teeth. There is great thirst, nausea, and, not unfrequently also, vomiting. *Diarrhœa is almost a constant symptom.* Meteorismus is frequent, and also a peculiar gurgling in the right iliac region is seldom absent; there is likewise generally great sensibility of some part of the abdomen. The urine is high coloured, and deficient in quantity.

3. *Respiratory organs.*—There is generally a *râle sibilant* present at the very commencement; and there is slight cough, attended with little tough and transparent sputa.

4. *Skin.*—A peculiar eruption generally appears from 7th to 9th day, consisting of small rose-coloured spots, which disappear on pressure, they are generally round, and not elevated above the skin.

5. *Sleep.*—Nights sleepless, or the patient slumbers a little; but if he do, he is generally troubled with dreams, which he cannot distinguish from his waking thoughts; and when asked how he passed the night, he usually answers he has not closed an

eye, although the nurse reports that he seemed to sleep occasionally.

6. *Organs of voluntary motion.*—The contractility of the muscles seems much impaired; and the weakness is so great, that the patient cannot in the least assist himself, and has to be moved like a dead mass. There are also observed twitches of the tendons of the wrists and hands, and convulsive movements of other parts.

7. *The blood.*—The changes do not seem constant.

8. *Termination.*—In the greatest number, from 15 to 25 days.

9. Chomel does not think there is evidence for its terminating on critical days.

Such are the characteristic symptoms of British and continental typhus, as the diseases are described respectively by practical physicians in the two countries; and we do not see how it is possible to divide them into two distinct diseases, without the most arbitrary separation of two groups of morbid phenomena, certainly much more closely resembling each other than the run of cases that occur of any ordinary epidemic, such as scarlatina. In fact, almost the only difference is, that there is more appearance of affection of the intestines on the continent than here. But supposing a case to occur here, with all the ordinary symptoms of typhus, and this one superadded, viz. diarrhœa and tenderness of the abdomen, would any British physician hesitate an instant in calling that a case of typhus? Certainly not; nor would any foreign physician hesitate to call a case presenting all the other symptoms of typhus by that name, because neither diarrhœa nor abdominal tenderness was present.

The very dissimilarities between the diseases admirably illustrate and strongly corroborate the doctrine which we have advanced of their nature. In both cases there is the same dyscrasia present, giving rise in both to the same *general* symptoms. Abroad, this dyscrasia manifests its presence by the deposition, in various organs, of a peculiar substance,—the seat of which is usually the ileum; hence, besides the symptoms common to the two, and essential to the disease, certain local abdominal ones are usually observed. In Britain, such a deposit is sometimes met with, but is more frequently wholly absent, hence local symptoms are of more rare occurrence; still the general symptoms are identical in both, and probably both depend on the same pathological cause, or the typhous dyscrasia, in the sense we have before defined and explained that term.

This view of the subject, whether it be confirmed by future observation or not, has at least something definite and precise in it, and presents a very different aspect from those vague theories of the pathology of the disease, that rest upon a fancied benefit derived from some particular mode of treatment or any other

hypothetical basis. To found pathological doctrines on the action of medicines, as commonly prescribed, would be to introduce the same elements of confusion and uncertainty into pathology that are so painfully manifest in therapeutics. It is to morbid anatomy, in combination with sound physiological principles, that alone we are to look for improvement in pathology; and, *perhaps*, when this is understood, the medical profession will not continue exposed to the bitter satire thus pronounced on themselves, "that the expectant method appears the most successful mode of managing the disease."

ARTICLE V.—*On the Origin and Development of the Diseased Condition of the Intestinal Glands, which occurs during the course of certain forms of Continued Fever. By* JOHN GOODSIR, ESQ., *Member of the Med.-Chir. Soc. of Edinburgh, Conservator of the Museum of the Royal College of Surgeons in Edinburgh.*

(*Read before the Med.-Chir. Soc., February* 1842.)

Without entering upon the question, as to whether the subject of the present paper constitutes a distinct species of disease, or be merely a form of the ordinary continued fever,—a question which I am quite satisfied will never be answered, so long as each pathologist confines the inquiry to the fever of his own district, without connecting with it the consideration of those forms of fever which occur in every separate district of a country or continent,—I shall proceed at once to describe a lesion which I observed some time ago in a disease which I was led to consider as typhous or continued fever.

On opening the abdomen of individuals who had died of this fever, we could always recognise the diseased condition of the internal surface of the gut, by the elongated bluish purple spots on its peritoneal surface, corresponding to the glands of Peyer on the internal surface; and this we could do, even in those cases in which, from other circumstances, the vascularity of the parts had disappeared after death.

On laying the gut open, the patches of Peyer's glands exhibited, according to the standing of the case, the various appearances which I shall now describe.

But before proceeding to detail the phases through which the patches pass, from the first appearance of the disease till the establishment of the typhous ulcer, or of perforation, I may remark, in regard to the condition of the mucous membrane in the neighbourhood of the patches, that it did not in every case exhibit unequivocal traces of inflammatory action. It might be

highly congested, or it might be perfectly bloodless in cases of well developed disease of these patches. I cannot say that I have often observed the mucous membrane pulpy or softened. The villi and follicles of Lieberkuhn have always appeared to me to be healthy. The vascularity, when it did occur, was met with principally in the neighbourhood of the glandular patches, and resembled in all respects that described and figured by Dr Bright in his report on the form of fever lesion now before us.

The commencement of the disease is first announced by the smaller patches becoming slightly elevated, so as to be hemispherical or conical, and by the more extended groups assuming a table-like appearance, with perpendicular edges, as if a flat plate had been placed on the mucous surface. The colour varies according to the case, from bright carmine red, to dark purple or black, continuous, or in patches. In the more vascular specimens, the colour is a yellowish gray, contrasting with the dead white or greyish white of the intestinal surface. More closely examined, the surfaces of the patches exhibit as usual, the follicles of Lieberkuhn and villi, differing in no respect from those on a healthy surface, and arranged around the vesicles of the patch in the usual manner. An examination of this kind must be made under water, and when conducted in this manner, the vesicles of the patch may be seen, by floating aside the membranous border and circle of villi which surround each of them. The vesicles themselves may thus be seen to be much distended with a yellowish matter—a distension which is now perceived to be the immediate cause of the elevation of the patch.

In the second stage of the disease, the patches still continue to rise above the surrounding surface, and to exhibit the changes formerly described, in a more characteristic manner. As the elevation increases, a change begins to take place on the elevated surface. This change may be partial, that is to say, it may take place sooner on some parts of the patch than on others, but generally it extends over the whole surface, and is bounded by a line situated from a 10th to a 16th of an inch from the edge of the patch. The change itself consists in the surface beginning to alter in colour, becoming dirty yellow or grey, and assuming a peculiar undulating or contorted surface, like a bit of leather seared with a hot iron. The villi have now in a great measure disappeared, but the orifices, or rather the circular folds, or pits, in which are situated the vesicles, are still visible. At last, the confines of the changed portion of the patch are rendered evident by a groove apparently produced by ulceration, which, appearing here and there on these confines, at last extends all round, and indicates some change about to take place in the whole arrangement of the parts.

In the third stage, the groove just described makes its way

into the tissues; and as it does so, the healthy but elevated mucous membrane on its external edge, gradually everts itself, as if by the upward pressure of the matter beneath it. While this is going on, the edges and surface of the altered portion become more rugged, and their former character somewhat obscured. The altered portion, which now assumes very much the appearance of a slough tinged with intestinal matters, becomes more and more detached from the surface to which it adheres. When the mass is gently raised under water, it may be observed that its attached surface sends processes down into the cellular membrane beneath; and if these processes be carefully drawn out, they will be found to correspond each with one of the original vesicles of the patch. When detached in this manner, they leave on the surface to which they adhered, dimples, or rather pits, which may be recognised as being the cellulo-vascular sheaths of the patch vesicles.

Occasionally the free surface of the altered portion comes away first, in the form of flocculent laminæ, and the deep processes continue to be attached for some time in the cellulo-vascular capsules, like little nodules or pellets of a rounded or pyriform shape.

The altered portion, even immediately before detachment, may still present on its surface traces of its original structure. The orifices of the follicles in which the vesicles are situated are visible here and there on the surface, and the membrane retains sufficient consistence to bind the mass together.

Fourth stage. When the sloughy mass has separated, the surface of what may now be called an ulcer appears flocculent; but, when examined under water with a couple of needles, a number of foveæ, the remains of the cellulo-vascular capsules, may be observed on it. In some of these, the little pellets of deposit may still remain attached, appearing like mustard-seeds scattered over the surface. The edges of these ulcers are thick and everted, and exhibit the natural structure of the mucous membrane. In some ulcers the eversion of the edges proceeds so far as to throw the mucous surface of the edge completely over, so as to apply it to the surrounding mucous membrane.

Fifth stage. The ulcer may now heal, or proceed to perforation of the gut. In the former case granulations, I presume, appear, and the reaction of these cellular elements carries on the contraction and cicatrization so well displayed in some of the preparations on the table. In the present form of ulcer, as in others affecting the mucous coat of the bowels, it is some time before villi again make their appearance on the cicatrized surface; but these changes I have not watched or observed. When the ulceration proceeds towards perforation, it is generally one spot of the patch which is more particularly affected, the rest of

the ulcer retaining its former granulating or flocculent appearance. At this stage of the process lymph begins to be deposited on the external surface of the gut; and if the patient survives the perforation eight or ten hours, the lymph rounds off the edges of the hole, and gives it that punched-out appearance so frequently observed. The omentum may adhere opposite the incipient perforation, and after contraction has concluded, it appears as if it had been forced from without into the hole, an appearance resulting from the contracting agency of the granulations.

Having now described the changes which the patches undergo in this form of disease, I have to point out the peculiar matter upon the presence of which these changes appears to depend. The grey matter which fills the vesicles or the spaces which they occupy, I find to consist of that universal element of every primitive tissue, healthy or diseased, nucleated cells. These cells are from 2000 to 4000 of an inch in diameter. They do not in general exhibit a nucleus in the sense in which that term is generally applied; that is, the individual cells do not present in their interior smaller cells holding certain relation to them. These cavities appear to contain a number of granules, four, five, or six, as far as could be reckoned. Whether these in the aggregate are to be considered as a nucleus proceeding towards the formation of a number of young cells, or whether the appearance is to be considered as analogous to that irregular form of nucleus and cell-contents characteristic of certain forms of tubercle, I do not know. This matter, of whatever nature it may be, appears first in the vesicles of the patches, and then spreads out on all sides, after the manner of other purely cellular structures, till the whole patch, before it is thrown off, appears to be principally formed of it; the surface of the mass, however, as has been stated, and certain parts of its interior, consisting of the somewhat altered mucous and submucous tissue.

The morbid changes which the glandulæ aggregatæ of the ileum undergo during continued fever, appear, from the observations I have just detailed, to be of the following nature, viz. the development of cells within the constituent vesicles of the patches to such an extent as at last to burst them, or cause their solution —the continued increase in the number of the cells, proceeding from as many centres as there are vesicles in the patch—the conglomeration of the whole into one mass above the submucous and under the mucous membrane—the distension of the latter, and the necessary ulceration and sloughing of the mass arising from this circumstance.

The whole mass, as detached from the gut, is not therefore to be considered as a slough; that portion only which consists of the upper halves of the vesicles and of the mucous membrane, being dead, the greater part, consisting of the cellular mass, being

merely detached from the submucous tissue, and consists of those nucleated cells, which, at first confined within their generative vesicles, had at last vegetated so much as to break their natural bounds, and to become one mass of cells, constantly increasing in numbers, except below, where the separate centres from which they originally proceeded are indicated by the processes and little pellets which are situated in the remains of the vesicle capsules.

It will have been observed that I have not employed the term "*inflammation*" in the course of the description I have just given. Whether the changes I have described originate in inflammatory action or not, of this I am certain, that the ulceration and pseudo-sloughing is an immediate effect of the distension from the submucous vegetating mass, and would occur whether the latter were produced by inflammation or not.

In regard to the history of this department of the morbid anatomy of fever, I may state, that Dr Bright has given very beautiful representations of the sloughs and ulcers in his *Reports of Medical Cases*. Louis and Chomel have referred to the appearance of the matter which distends the glands, and compared the process to the tuberculous. Schönlein, in his *General Pathology*, has made a general allusion to the deposit, and to the changes which occur in the patches.[1] Gruby, in a work on the *Microscopic Character of Morbid Products*,[2] was the first, as far as I can learn, who figured and described the cells of which the deposit consists. Finally, Rokitansky[3] has generalized the subject, and considered the matter deposited as peculiar to typhus fever, and referable to the same category as cancer, tubercle, &c.

My own observations have been made without reference to any hypothesis as to the pathology of fever.

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[1] Schönlein allgemeine une specielle Pathologie und Therapie Zweiten Thiele. 1839, p. 23.

[2] Observationes Microscopicæ auctore Dav. Gruby, 1840, p. 44.

[3] Rokitansky. Handbuch der Pathologischen Anatomie, band iii. p. 265.

PART SECOND.

REVIEWS.

Elements of the General and Minute Anatomy of Man and the Mammalia, &c. By FR. GERBER, &c. &c.

(*Continued from p. 287 of last Number.*)

Passing over 52 pages of Dr Gerber's work, in which the author speaks of the different constitution of cells as found in the ovum and epidermic structures, according to the arrangement of Schwann, we resume our analysis at the 169th page, where he treats of cartilage.

"Cartilages are divided into *permanent* and *ossific*. The former, as their name implies, persist, as cartilages, to the time of old age; the latter, at a shorter or longer date, are converted into bone. Examined microscopically, they present three kinds of intimate structure: 1st, In one we observe cells, or cartilage corpuscles, as they are called, scattered through a hyaline or intercellular substance,—*cellular cartilage;* 2d, In another, the cells or cartilage corpuscles, instead of being dispersed through a vitreous matter, are scattered betwixt the meshes of a reticulated fibrous matter,—*reticular cartilage;* 3d, In a third, the texture is a mixture of the reticular and simply fascicular, the intersection of fibres being here very great, the fibres thus running more in the manner of those which make up the elastic tissues,—*fibrous cartilage.*" P. 170.

The transformation of cartilage into bone is thus described:—

"Whilst those parts of the cartilage that are remote from the point or points of ossification, are remarkable for a regular dissemination of cartilage cells through their substance, those that are close to it exhibit a clustering or agglomeration of these cells, separated by an apparently homogeneous intercellular substance. In these clusters, it is not difficult to distinguish cells of older and more recent formation, simple, and united or blended cells, and smaller and larger isolated nuclei. Where the ossification begins, these clusters are more closely crowded, and are ever more and more distinctly surrounded and enclosed by a delicate line. These lines, speaking of them in the plural, probably indicate primary or parent cells, those cells which arose in the fœtus on the first formation of the cartilages, and within which the secondary cells, the prime means of growth in reference to the cartilages, have arisen." "Whilst the bone corpuscles appear in bone in progress of formation, the cartilage corpuscles disappear, and bone cells are produced in their stead, and thus fill the entire spaces. The ossification of the fœtal cartilages proceeds entirely in the same manner. The cartilage corpuscles, ever more and more crowded together and compressed, cede the space they formerly occupied to the increasing osseous substance. This grows constantly

more and more opaque, bone corpuscles make their appearance, then vessels, &c., and the bone is achieved."

"This process may be explained in the following manner. The secondary hyaline substance, an element included within the primary cells, and in cartilage not to be distinguished from the parietes of the parent cell, is constantly dissolved, and in the fluid state permeates or transudes the walls of the primary cells, now become invisible, or it coagulates on the inner aspects of these cells. Out of this cytoblastema, cytoblasts (the bone corpuscles) are formed by coagulation and organization of the now hyaline substance; and from them are produced the bone cells, which comport themselves in the same manner as the embryonic cartilage cells; in other words, they form a cellular mass, without any interposed matter or intercellular substance. Whilst the recently formed bone cells are growing, new cytoblasts arise between them and the shrunken parent cells, in the mass of cytoblastema, which is incessantly prepared by the transudation of fluid through the walls of the parent cells, or, it may be, which is laid up by coagulation upon their inner aspects. The cartilage corpuscles, as said, ever more closely pressed together, disappear; the nuclei of the bone cells acquire all the while calcareous salts, and become opaque; the bone cells themselves appropriate salts of the same kind; radiated points, nutrient vessels, &c. make their appearance, and the bone is fully formed." Pp. 178—80.

Thus the bone corpuscles of Müller, according to Dr Gerber, are the nuclei of bone cells, and the canaliculi, or radiations from them, extend on every side to the confines of the cells. True bone is always formed in the manner described, in the ossification of embryonal cartilages, in the renovation and repair of broken bones by exudative inflammation, in the ossification of the cartilaginous epiphyses, in the more tardy ossification of the costal cartilages, and, finally, in that of the permanent cartilages in advanced age. On the other hand, such bony concretions as are sometimes formed in the arteries in the dura mater, ossified glandular cysts, &c., have never the structure of true bone.

The author now enters upon the description of the structure found in teeth. On this subject we need not enter, as English anatomists have pushed their researches regarding it much further than Dr Gerber seems to have any idea of. The valuable and laborious researches of Goodsir, Nasmyth, and Owen, must also be well known to our readers. The tissues are next spoken of; and, first, of the *elastic*, *fibrous*, and *cellular tissues*.

"By *cellular substance*, we understand the matter of which the fibres of the cellular tissues consist: by *cellular tissue*, the various compounds that result from the crossing or intertexture of these fibres. The structure which is commonly called cellular substance, is an extremely compound body, and, besides proper cellular fibres, contains blood and lymphatic vessels, serous fluids, blood and lymph, fat, nerves, &c. Cellular substance is a soft, moist, glutinous, elastic, white or grey coloured, and very transparent material. The peculiar delicacy of its elements gives it a certain resemblance to thick mucus. It forms cavities (areæ, areolæ) of various sizes, which are more or less completely filled with serum of fat. It seems to possess a certain degree of organic contractility, *i.e.* an inherent power, on the application of certain stimuli, of shrinking in bulk. It has, however, little ordinary sensibility. Delicate reticulations of blood-vessels and lymphatics extend in all directions and in great abundance betwixt its fibres and laminæ; it is, therefore,

upon occasion apt to increase greatly in quantity, and is readily reproduced. The branches of nerves, which are visible in the cellular substance by the naked eye, do not belong to it, but merely pass through it towards other organs. In consequence of the delicacy of its elements, it possesses considerable powers of adhesion and capillary attraction, so that it is often seen to become rapidly and greatly distended with watery fluids from neighbouring parts. Its meshes and areolæ are more or less connected through the entire body, so that air or watery fluid permeates it readily, the watery fluid, by reason of its specific gravity, falling down and infiltrating the most depending parts." Pp. 211, 212.

Mr Gulliver adds the following note:—

"After the cellular tissue has been completely destroyed, it is generally not reproduced. Witness the adhesion, as it is termed, of the scars of old deep ulcers to bones,—a circumstance which is often considered as a sufficient cause for the rejection of otherwise eligible recruits for the army; and every one is acquainted with the depressed cicatrices, where there is a want of subjacent cellular tissue, which follow various sores, particularly those in which there has been sloughing of the cellular substance. Independently of ulcers, the cellular substance of some parts, as of the legs, appears to be liable to atrophy, so that the limbs become hide-bound." P. 212.

In what has been said on the serous and synovial membranes, as well as on tendons and ligaments, we find nothing to detain us.

The author then enters upon the consideration of muscular structure. The muscles are divided into organic, animal, and mixed.

"Examined microscopically, the organic muscles are found in general to consist of delicate yellowish and coloured transparent fibres, with very faint boundaries, which, like the round fibres especially, though singly cylindrical, are flat or prismatic when united into bundles, the pressure of the several fibres giving them this figure. The fibres seldom run stretched out, and united into round bundles; they are far more commonly bent sinuously, or are even cramped and combined into flat cords. In a higher degree of rigidity, they are often irregular and shortly bent, by which they acquire the peculiar angular character which H. R. Ficinus has so faithfully represented in his figures. The fibres and bundles open and close under the mucous membranes in the manner of nervous plexuses, and for meshes in which mucous glands lie embedded, or they surround these like loops. The muscular bundles lying in the same plane from muscular membranes, which are disposed one over the other in two or three layers, the component bundles of each always crossing those of the other obliquely or at right angles, thus forming networks or gratings.

"In this manner appear for the most part the fibres of the muscular coat of the œsophagus, near the stomach; of the stomach itself, and the intestinal canal, with its immediately derived ducts, the hepatic and pancreatic ducts; of the urinary bladder and the ureters; of the vesiculæ seminales and vasa deferentia; of the trachea and bronchi; and of the middle coat of the veins and lymphatics." Pp. 233, 234.

The fasciculi of the voluntary muscles are characterised by transverse markings or striæ, as also the muscular substance of the heart, and that of the œsophagus near its ventricular end. According to the author, "no voluntary muscle without trans-

verse streaks is known,"—a statement which is directly contradicted by Mr Gulliver, who says,—

"Many fibres of voluntary muscle are without these streaks. Such fibres appear to be composed simply of irregular granular matter inclosed in a sheath, (*sarcolemma*,) without the least appearance of primitive fibrils. In the pectoral muscle of the long-eared bat, (*Plecotus auritus*, Geoff.) examined immediately after death, almost all the fibres were of this character." P. 235.

It is now well known, that each muscular fibre, as seen by the naked eye, is made up of a greater or less number of fasciculi, (*primitive fasciculi*,) each of which is surrounded by a delicate sheath, (*sarcolemma*.) The fasciculi are again composed of numerous minute fibres, from $\frac{1}{700}$th to $\frac{1}{400}$th of a line in diameter, (*primitive fibrillæ*.) These fibrillæ are, according to the author, composed of granules which appear elliptical in the relaxed muscle, their longer diameter then corresponding with the long axis of the fibre; but during the action of the muscle, they become flattened pomegranate-wise on their contingent surfaces. The granular appearance he attributes to the short sinuous bendings of the fibrillæ.

Dr Gerber seems to think that the transverse striæ are at times dependant on the granules of the ultimate fibrillæ being arranged in transverse rows, at others, on the presence of a wrinkled sheath, and sometimes on fibres being wound spirally round the primitive fasciculus; at least such is what we gather from the following paragraph:—

"If the granules of the associated primary fibres present themselves arranged in transverse rows, and the common transverse connecting lines become forked in consequence, so that the spheroidal granules project in higher relief along the contracted primary fasciculi; the fasciculi then appear more or less regularly striated transversely. These relations appear not to obtain beyond the surface of the primary fasciculi; at all events, the appearances in the deeper bundles are so far modified, that the cross streaking seems frequently to depend on the presence of a wrinkled fascicular sheath; for when the more superficial fibres chance to be removed, and the deeper ones exposed, these appear cylindrical, and the bundle at the part is longitudinally streaked. At the extremity of a torn fasciculus, too, the peripheral fibres often appear so distinctly marked off from the internal and more pulpy substance, that the existence of a more compact transversely streaked sheath can scarcely be called in question. For the accuracy of this view of the matter, the observation of fibres wound spirally about the primary muscular fasciculi of the dog is a farther and strong assurance; so also is the observation of Professor Valentin, to which fig. 80 bears reference. The suspected sheath, I believe to consist decidedly of granular fibres, which may, however, by possibility be separable in two directions, viz. transversely and longitudinally, according as the union of the neutral connecting medium of the granules in the peripheral layer is more intimate in the long or in the transverse axis of the fasciculi. Every trace of granules disappears from the animal muscles, even after boiling, under the action of the oil of turpentine, continued for a day or two." Pp. 241, 242.

Thus then the author seems to consider the transverse mark-

ings to be sometimes dependant on one kind of structure and sometimes on another,—a conclusion to which we are decidedly opposed. The transverse striæ are common to voluntary muscles in all the vertebrate and higher tribes of the non-vertebrate animals; and a phenomenon so uniform in its appearance, must, we conceive, be always dependant on the same structural arrangement. The author, however original he may be in ascribing it to different causes in various animals, or different parts of the same animal, is certainly not so, in referring the striæ to the granular fibrillæ, the sheath, or the spiral fibre wound round the fasciculus.

On examining into the observations made upon this subject, we find that the explanation of the transverse striæ has exercised the ingenuity of microscopic observers ever since the days of Leuwenhoeck, who ascribed them to circular contractions in the primitive fasciculus. By Prochaska they were attributed to the impressions made by the vessels, nerves, &c., on the surface of the muscles. Fontana speaks of them as ridges or diaphragms caused by the contractions of the fibrillæ, and their then assuming a globular form. According to Treviranus' first opinion, they were ridges formed by the shortening of the cylinders; latterly he ascribed them to folds of the membrane investing the fasciculus. Prevost and Dumas also attributed them to the presence of this sheath. Turpin thought that the bundle of primitive fibrillæ, constituting the fasciculus, was surrounded by an aponeurotic gut, which was firmly puckered or folded across; hence the appearance of striæ. Mandl was the first to describe a filament of cellular tissue wound round the fasciculus in a spiral manner, causing alternate white and dark transverse lines. Mirbel attributed the striæ to granulations on the membrane of the fibre—Wagner, to furrows on the surface of the fasciculus. According to Schwann, the primitive fibrillæ have a varicose structure, to the opposition of which the transverse striæ are to be attributed. Prevost describes them as rings surrounding the fasciculus. Skey considers them to be the woof to the warp of the longitudinal filaments, to which they are intimately united. Bowman is of opinion that the fibrillæ are composed of globules, and that the adaptation of these side to side, constitutes the transverse striæ. From the researches of this observer also, it would appear that the striæ are the edges or focal sections of plates or discs, arranged vertically in the course of the fasciculi, each of which is made up of a single segment from every fibrilla. He notices also, as does Gerber, that the fasciculi crack across in the direction of the transverse striæ, or split up in the direction of the fibrillæ, according to the amount of cohesion endways or sideways, existing between the segments.

The description of Bowman entirely corresponds with our own observations. Indeed, we are at a loss to conceive how obser-

vers could ever have attributed the striæ to the sheath, inasmuch as they are well marked on isolated fibrillæ. Any one may, in a moment, convince himself of this fact by crushing, between glasses, and examining microscopically, a small portion of muscular fibre from a boiled haddock, in which animal we have always found it very easy thus to demonstrate the ultimate fibrillæ. The discs also described by Bowman admit of ready demonstration, after keeping some portions of human muscle in spirits for a few days, when they may readily be shown isolated. We are somewhat surprised indeed that there was not added to the work some condensed account of Bowman's researches, in whose opinions regarding the transverse striæ, so much at variance with those of our author, we fully concur.

Dr Gerber describes and figures the ultimate fibrillæ in the masseter muscle of the horse, as being coiled up like intestines within two distinct sheaths. We should like to have had farther details upon this point, as such an appearance is quite different from what has hitherto been seen by any other anatomist. He also speaks of crescentic or half-moon-shaped bodies, from $\frac{1}{1333}$ to $\frac{1}{1000}$ of a line in diameter, with rounded heads, centrally raised, and blunt-pointed tails. Can he mean, by these bodies, the corpuscles, described and figured by Bowman as cells arrested in their development? In our opinion, the author ought to have been more explicit on these novel points. It is singular, also, that he has not figured the curious bodies latterly alluded to.

Dr Gerber now speaks of the tubular or hollow filamentous tissues, to which division belong nervous, vascular, and glandular structures.

We must here remind our readers, that the researches of Ehrenberg, confirmed by those of Treviranus, Remak, Burdach, Valentin, and others, have demonstrated that the grey matter of the nervous substance is essentially *granular*, and that the medullary matter is *tubular*. It is also admitted that the white matter of the nervous centres, and nerves of pure sensation, are composed of varicose tubes, and that of the motor and spinal nerves, of medullary or cylindrical tubes. Both these kinds of tubes contain a fluid, the physiological action and use of which is unknown. Now, that portion of Dr Gerber's work dedicated to the description of nervous structure, contains much original matter; and, should the statements brought forward be confirmed, will have added much to our knowledge of this subject. They are of such a nature, however, as must excite great caution amongst anatomists. Speaking, for instance, of the elementary tubes of the nerves, he says,

"More particularly examined with the assistance of high powers and artificial light, a more delicate investing membrane is discovered, within the outer thicker and sharply defined one of each particular fibre. This fine membrane appears to be composed of, or, at all events, to be covered by a ciliary

epithelium, the ciliæ of which lie very obliquely, and apparently in spiral lines upon its inner aspect." Pp. 256-7.

In a note, it is stated,—

"If this structure be confirmed by the observations of others, the nerves would come to be ranked among the true vessels. The peculiar structure in question was first noticed by Professor Valentin, in a course of observations upon the nerves of living animals, which we had undertaken in common about a year ago. The object of the movement of the nervous fluid in the interior of the tubes, supposing it to be continued backwards from the ultimate loops, would be precisely that which is accomplished by the heart in regard to the blood—a constant, though, perhaps, slow change of the contents of the nerves from the centre towards the periphery, and from the periphery towards the centre." P. 257.

Since reading the above paragraphs, we have sought for these ciliæ in various animals immediately after the extinction of life, and taken every precaution to find them, but in vain. We have thus examined the nervous tubes, under magnifying powers varying from 250 to 4000 diameters—not that we consider any enlargement after 800 diameters of much use—but simply that we might not neglect any means in our power to detect them. We cannot, therefore, but regret that the author has not entered into more details upon this interesting point, or indicated the proper means to be followed in order to insure success in the examination.

The peculiar form of the varicose tubes has by some been ascribed to the pressure employed in demonstrating them. No doubt, pressure increases the size and number of these varicosities, but the disposition which these tubes have to assume this form may be considered highly characteristic. The author seems to attribute it to an irregular *contraction* of the nervous tubes soon after death, "probably in consequence of the unequal density of the contained fluid after its coagulation." No arguments or reasons, however, are brought forward in support of this supposition. At the same time he looks upon this moniliform state of the "fibres" as the natural condition, at their origin in the brain and spinal cord, a circumstance which, if true, cannot but be considered as inconsistent with the opinion previously expressed. He has figured these tubes (fig. 89) as giving off branches in a dichotomous manner, with the granules of the brain attached to them, like berries to a plant;—the whole presenting an appearance such as we have never seen in the numerous demonstrations of the brain we have made, and which, if drawn from nature, cannot but be regarded as somewhat singular.

The question, whether any different structure exists between the motor and sensitive nerves, is thus disposed of:—

"The most careful examination discovers no difference in the structure and appearance of the bundles and their fibres, whether they be connected with sensation or motion." P. 259.

Regarding the central terminations of these tubes, it is well known that Valentin describes them as forming loops at the line of contact of the white and grey substances. We have in vain looked for these loop-like terminations in the nervous centres, and, moreover, have never met with any anatomists who have been more fortunate than ourselves. Burdach thought that they were produced by the pressure of the scissors which Valentin employed in slicing the brain. At all events, it is singular that Gerber, the companion and demonstrator of Valentin, however positive he may be on other points, here speaks with some caution. He says, "*in all probability*, two fibres of the roots of the nerves form a loop in the brain and spinal marrow, as they do in the periphery" (p. 258); hence we may conclude that great obscurity still hangs over the central terminations of these tubes.

In their course, the ultimate tubes or fibres of various nerves blend in various ways with one another, constituting different kinds of nervous mixtures, such as could not have been conveniently formed at the commencement of the trunk.

"The nerves which proceed from different parts of the central system, and unite in this way in their peripheral expansions, generally combine in retes or networks, giving and receiving alternately bundles and isolated fibres from neighbouring branches; these bundles and fibres, however, merely joining with each other, and proceeding side by side, never anastomosing and blending into single trunks, as vessels do when they meet. The primary or ultimate fibres of nerves, in fact, only form loops or circles; they never end; the mutual interchange of bundles and single fibres is often extremely complicated, but no one is ever lost; it either returns upon itself, or joins some neighbouring fibre or fasciculus, and so begins its backward course to the central system whence it had proceeded. The reticular unions of the nerves are universally designated plexuses, which are of different kinds:—1st, Plexuses of the roots; 2d, Plexuses of the trunks; 3d, Plexuses of the branches; 4th, Ganglionic plexuses; and 5th, Terminal or peripheral plexuses." P. 260.

With respect to the peripheral terminations, the author observes:—

"From the ultimate peripheral plexuses of the nerves, individual primary fibres at length take their departure, and form terminal loops; or otherwise, the finest fasciculi and cords resolve themselves into primary fibres which form the terminal loopings, these being always constituted by two primary fibres from the same or from different fasciculi. Such final loopings present themselves wherever peripheral nervous influence or impressibility is manifested; for the nervous workings in the various organs depend, not upon the trunks, branches, ramuscles, or even the most delicate fasciculi, but upon these final loopings of the nerves, which are, therefore, the necessary media by which the motory nerves elicit motion, and the sensory nerves convey sensation. The pain or impression produced in the point of the trunk of a nerve which is irritated, and which usually accords in kind with that which belongs to the peripheral expansion, depends, as my discovery has shown, upon the presence of terminal loopings in the fasciculi themselves; *nervi nervorum*, in short, which stand in the same relation to the nerves as the *vasa vasorum* do to the larger blood-vessels." P. 261, 262.

The discovery of *nervi nervorum* is interesting, and the explanation of phenomena founded upon it ingenious.

In the peripheral structures of the body the nervous tubes form loops, generally of considerable size.

"From a terminal fasciculus, which generally runs parallel with the muscular fasciculi, primary fibres proceed, and forming wide arches across the line of the muscular fasciculi, associate with another nearer or more distant nervous bundle, and begin their backward course." P. 262.

The different loops so occasioned assume different forms, which are thus described:—

"The final loops of the nerves of sensation, those of touch in especial, are less open than the final loops of the voluntary muscles. In those that surround and that penetrate the bulbs of the hairs, the loops seem even to be completely, or all but completely closed; those of the pulps of the teeth are also, according to Valentin, but very slightly open, and, like the loops in other situations, are formed now from primary fibres proceeding from and returning to the same bundle, now proceeding from one, and returning to different and more distant bundles. The final loopings in the less sensitive portions of the skin comport themselves like the associated capillary inosculations of the blood-vessels, which have long been familiarly known; and where the final loops resolve themselves into many subordinate or smaller ones by doublings and convolutions, for the purpose of forming a multiplier for the peripheral nervo-electric function, as they do in the tactite papillæ, the peripheral distribution of the capillaries will be found to be of the same description. The highly sensitive tactile papillæ seem often to consist of a single greatly-convoluted primary nervous fibre. Fusiform multipliers of the same kind are occasionally found in the course of straight primary fibres. Several shortly convoluted terminal loops, disposed like the segment of a sphere, sometimes form the rosette-like nervous or tactile papillæ, which are exhibited in figure 101. Between such tactile rosettes, or capitulate nervous papillæ, we sometimes observe simple loops included; for example, in the finger of man." Pp. 262—264.

The above description is well illustrated by plates 17, 18, 19, and 20.

The author is of opinion that the cellular fibres which surround the oftentimes scantily-distributed primary nervous fibres, may serve as subordinate means for conducting the nervous influence, which he considers likely to be the case from the constancy of their presence. For our own part, we see no necessity for this assumption, and consider that the neurilema of nerve, as well as the sarcolemma of the primitive fasciculus, may be present without participating directly in the functions of the structures they enclose.

In the grey matter of the brain and spinal marrow, besides blood-vessels, albuminous granules, grey organic or naked fibres, and nascent roots of nerves, which form the largest portion of the mass, are found bodies which have been termed *ganglionic cells* or *ganglionic globules*. They resemble, in appearance, the unimpregnated ova of the ovaries. They are found in the grey matter of the brain and spinal cord; in the trunks of nerves

where the roots of sensitive and motor nerves come in contact; in the course of the grey organic nervous trunks; the sympathetics, and in the peculiar ganglia of the trunk and branches of the sympathetic nerve.

The following paragraph affords a good example of the method in which Dr Gerber summarily settles some of the most interesting and difficult physiological questions. Whether such positive assertions, unsupported by observations or experiments, will satisfy our readers, we know not; we must confess that to us they are far from convincing.

"Peripheral impressions are transmitted to the nearest ganglion with which the part of the periphery impressed is connected, and are received with or without consciousness, according as the receiving grey or ganglionic substance is contained in the brain or spinal marrow, or in one or other of the disseminated ganglia. From thence follows, in a centrifugal direction, the nervous reaction which is proclaimed or manifested by motion, reflex motion, or by phenomena or actions of other kinds, either in the impressed periphery itself, or in its neighbourhood, or in some more distant parts only connected with that peculiarly impressed, in virtue of the general association which makes one whole of the nervous system." Pp. 266, 267.

The author now enters upon a consideration of the vessels, and first, of the lymphatic and absorbent vessels. The following passages, describing the structure and relations of the mesenteric glands, present that mixture of fact and hypothesis which we regard as, in some measure, characteristic of the German school:

"The glands which we observe in such numbers at the root of the mesentery, and which are therefore called mesenteric glands, are, like the conglobate or lymphatic glands, in general convoluted or plexiform masses of lacteals, assuming the appearance of solid fleshy organs. The mesenteric glands are interposed between the peripheral and central orders of abdominal absorbent vessels. By means of the glands in question, the chyle, probably with a view to its assimilation, is brought under the peculiar influence of the organic nerves, at the same time that it is in intimate contact with a large amount of living organic surface. The branches and subordinate divisions of the lacteals anastomose freely in these glands, and the finer twigs finally form a pretty uniform, close, and fine-meshed rete, which again gathering itself into minuter, and then into larger branches, these unite and produce efferent vessels, which carry the fluid onwards in its course. The mesenteric glands are well supplied both with blood-vessels and nerves, which pierce them at every point, and surround the various subdivisions of the lymphatics. The various constituents of the mesenteric glands, as now enumerated, are connected by means of cellular substance."

"The mesenteric glands, therefore, unite a portion of the periphery of the vascular and of the nervous system with their own proper substance, with the reticular mass of lacteal vessels of which they principally consist; and, as the efferent vessels proceed, after the formation of the glands, in the same onward direction as the afferent vessels, they may be held as standing in the same relation to the blood glands generally, as the fusiform nervous papilla stands to the more ordinary form; and as the primary bundles of the nervous ganglia open up, and resolve themselves into their primary fibres, which, after surrounding the ganglionic cells, again unite, and form an onward trunk, so the lymphatic glands, which have an analogous structure, are often, and not inappropriately, spoken of as *lymphatic ganglia*; and,

by an extension of the same views, the spleen, thymus, thyroid, and suprarenal bodies, are sometimes mentioned under the name of *blood ganglia*." Pp. 274—276.

The following is important in a pathological point of view:—

"As the very finest lymphatics are still considerably larger than the system of intermediate peripheral blood-vessels in the passage of arteries into veins, wounds, abscesses, &c., may give occasion to the entrance into the general circulation of pus and other corpuscles of larger sizes than the blood discs. These flow readily enough on to the heart; but, forced into the lungs, they are apt to stick fast in the capillaries of these delicate organs, impeding the circulation through them, and, after the lapse of a few hours, giving rise to exudations and to the formation of cytoblast tubercles.

"Indubitably, also, stases of the lymph and chyle occur in the glands connected with the lacteal and lymphatic vessels, either in consequence of the coagulation of their contents, or of inflammation of the vessels themselves. The effects of such stoppages are not only frequently obvious among the larger glands in depositions of albuminous matter, the solvent of which, the serum, has been removed by absorption, but also in the innumerable peripheral false glands. In the scrofulous diathesis, it is well known to what an extent the central as well as the peripheral lymphatic glands will enlarge; and when examined microscopically, their pathological contents, besides imperfect exudation corpuscles, present albuminous granules and amorphous coagula in quantities so much the larger, as the glands examined belong more completely to the periphery, and as the formation of fibrine seems to have been rendered difficult by the discrasy of the fluids or general cachectic condition of the individual." Pp. 283, 284.

Considering what has been done in Germany with reference to the capillary or, more properly speaking, intermediary vessels, we cannot but think the description of Dr Gerber somewhat meagre. The following comprises what he has to say with regard to their mode of distribution:—

"The peripheral portion of the sanguiferous system presents itself under a variety of appearances, as a glance at the figures will render obvious. In general, it bears a close resemblance to the peripheral expansion of the nerves of the corresponding part of the body, inasmuch as the terminal plexuses of the nerves form a more or less continuous and closed rete, the meshes of which inclose similar meshes of the capillary arteries. The terminal loops of the nerves are also accompanied by very similar terminal loops of the arteries or intermediate capillary vessels. Even the particular forms of peripheral nervous distribution have their analogies in the peripheral vascular system." Pp. 292.

We should like to have seen a good exposition of the views and researches of Berres, Krause, and Hyrtl on this point, which we do not think are much known or sufficiently appreciated in this country.

While speaking of erectile vessels, the following observations deserve notice.

"The spleen, like the male organ, is penetrated in all directions by a reticular fibrous tissue in connection with its general outer investing tunic. The spleen is beyond all question an organ susceptible of various degrees of injection with blood, and, therefore, of *distension;* but it is not an erectile organ in the same sense as the penis or clitoris; this, however, happens ra-

ther from the manner of its attachment than from any difference of structure. Were the spleen implanted upon a bone, it would upon occasion, and without any impediment to the return of its blood, become *erected* instead of being simply *distended*." P. 300.

Erection of the penis is thus explained:—

"It would seem that neither the more rapid action of the arteriæ helicinæ, nor the repletion of the venous rete of the corpora cavernosa in consequence of this, nor the action of the ischio-cavernosi muscles, nor yet the compression of the dorsal vein against the symphisis pubis, are competent to produce erection of the penis, although each and all of these acts contribute, and are indeed essential to the effect; but that it is principally and more immediately dependent upon the agency of those reddish fibres and fasciculi, which I regard as *contractile tissue*, which enter into the structure of the organ. I have already had occasion, oftener than once, to mention this tissue as presenting itself in the composition of the scrotum, where it is known under the name of the *dartos*, of the nipple, of the skin in general, and of the iris; and which appears everywhere to stand in a peculiar and especial relationship to the nervous system." Pp. 301, 302.

The intermediary vessels must always excite, in an especial manner, the interest of the pathologist. It is they which are directly concerned in the production of those morbid effusions and depositions which constitute organic disease. Of inflammation we have previously spoken. Another subject of equal importance, however, here claims our attention, namely, the deposition of tubercle.

Tubercles, according to the author, are conveniently divided into *albuminous* tubercles, *fibrinous* tubercles, and tubercles of a *mixed nature*.

"*Albuminous or unorganized tubercles* can only be produced from exudations abounding in albumen, poor in fibrine. They consist almost entirely of granules from the $\frac{1}{150}$th to the $\frac{1}{300}$th of a Paris line in diameter; but with the granular matter, nucleoli, nuclei, or cells, are mingled in quantity bearing relation to the amount of fibrine which the exuded fluid contained." P. 305.

If nucleoli, nuclei, or cells are found in this albuminous tubercle, we are not warranted in considering it unorganised. It may be non-vascular, but organization exists long before vascularity. A nucleated cell, for instance, must be regarded as a highly organized structure.

"What may be called *false albuminous tubercles* also arise occasionally within the substance of the secreting glands, in the granular degeneration of the kidneys for example. In the earlier stages of the disease, indeed, the albumen is deposited in the tortuous uriniferous canals of the cortical substance; in the fully formed disease, however, it is met with among and between the tissues also. The albuminous, or granular tubercle, is with great propriety often spoken of as the *scrofulous tubercle*, the disease being especially developed among scrofulous individuals." Pp. 305, 306.

We are of opinion that Dr Gerber has confounded together two different kinds of tubercle. That there is a granular and, strictly speaking, unorganised tubercle, we have often convinced

ourselves, as must every pathologist who has examined this morbid product microscopically. No doubt numerous specimens of tubercle are to be found in which the change from the granular to the cellular variety is very gradual, and that more granules or cells may be present, according as the portion examined belongs to one form or the other. At the same time, it is necessary to make a distinction, and we hold that, whenever a distinct cell is observed in tubercular matter, we ought to class it amongst the cell tubercle.

The *fibrinous tubercle* is described as consisting of the plastic exudations from the blood-vessels into the different softer textures, which take place in consequence of impediments to the flow of blood through the capillaries. Taking degree of organisation as the basis of a division, the author distinguishes as varieties, the *hyaline* tubercle, the *cytoblast* tubercle, *cell* tubercle, the *cellulo-fibrous* tubercle, and the *filamentous*, *cicatricular*, or *organised* tubercle.

It must be evident that if these exudations are produced in the manner described, the same cause, namely, stasis in the vessels, must occasion inflammatory and tubercular depositions. Yet nothing can be more distinct than these two morbid products when examined microscopically. Hence, then, we consider the mechanical explanation of these productions erroneous, and herein find another powerful argument in proof of the opinion that this difference must in a great measure be attributed to some previous change occurring in the blood. What the author calls mixed tubercle we do not know, for although it constitutes his third division of tubercular depositions, he does not again allude to it.

Mr Gulliver's description of tubercle is much more consistent with our own observations, and we consider it to be a good one.

"It most frequently happens that tubercle exhibits no regular structure, so that the nicest examination can detect nothing more than a granular matter, minute spherules, and shapeless flakes or fragments; this is especially the case in caseous tubercle, whether occurring in the lungs or elsewhere. Sometimes the fragments, though still shapeless, are more distinct, yet unlike cells or their nuclei; and many of the minute spherules may be attached to some of the fragments. In smaller tubercles corpuscles are often seen, having much the character of cells or their nuclei; the envelopes are either absent or indistinctly blended with a minutely granular base. It is only in minute and recently formed tubercles that perfect cells exist; cytoblasts and cells, however, may sometimes be found at the periphery of crude tuberculous matter; and corpuscles, which are probably effete cytoblasts, are often present in softened tubercle. In tubercles of the most recent formation I have occasionally seen vesicles, and an aggregation of these sometimes forms a pretty large tubercle. These vesicles appear to me to be much more common in the lower animals, particularly in the quadrumana, than in man; and they are most easily examined in transparent parts, as the omentum." *Ap.* p. 85.

We have frequently detected the vesicles here referred to in

the sputa of phthisical patients. They are very often perfectly round, although sometimes oval, as Mr Gulliver has figured them. Some of them contain smaller ones in their interior, which may be often seen floating loose in the field of the microscope on rupturing the parent cell. We also, with Mr Gulliver, have been much struck with their resemblance to hydatids, and if they should hereafter really be found to be animal in their nature, the opinions of Baron and Carmichael will have received positive confirmation.

We cannot conclude our analysis of this work, without attending to the valuable observations of Mr Gulliver on the blood-corpuscles of mammiferous animals and of birds. He has carefully examined, during a period of five years, and with the animals of the Zoological Gardens in London at his disposal, the blood corpuscles of 176 different mammiferous animals, and 204 different species of birds. From the facts he has brought forward, there can be no doubt that the globules vary in size even in the same species. This variation may be very great in disease, and is often sufficiently perplexing in health. But in the latter state, the change of size seems to be confined within certain limits. The corpuscles of the horse, for example, at different times are remarkably variable in magnitude, but never so much so as to render it difficult to distinguish them from those which are clearly intermediate in size, as of the rabbit and sheep. He observes,

"It is not uncommon to see the majority of the discs of two remarkably distinct sizes, one about half or two-thirds the magnitude of the other. The larger appear to be the regular corpuscles, and readily run into the characteristic piles, which the smaller seldom do. The two sizes in question seems to be most frequent in blood obtained from dead animals. The smaller variety scarcely ever presents either the swollen edges or the cup-shaped appearance." *Ap.* p. 3.

Are not the smaller discs, here alluded to, the separated nuclei? He alludes to the account of Hewson, that the blood globules of young animals are generally larger than those found in the adult. He thinks, however, that this is only the case in embryos at an early period of existence, and he has sometimes found them smaller in the fœtus than in the mother. The corpuscles of the elephant are the largest yet discovered, as was first pointed out by Mandl; next in size are those of the capybara, a rodent animal. The corpuscles of the napu musk deer are the smallest, and not those of the goat, as was previously supposed. They are slightly thicker in animals than in man. In the camelidæ the discs are oval, a fact first discovered by Mandl in the dromedary and paco, and subsequently by Gulliver in the vicugna and lama.

The tables of measurements of the blood discs of mammalia and birds, occupying 53 pages of the work, present a strong

proof of Mr Gulliver's industry, and offer a mass of facts that cannot but be highly appreciated by all microscopic observers. We consider it, however, a matter of great importance to know positively, whether all the measurements were taken while the blood was perfectly fresh, and whether some of the smaller discs be or be not separated nuclei. We would take the liberty of requesting Mr Gulliver to make these points known to the scientific public, as a knowledge of these would render his labours more exact and more extensively useful.

The work is accompanied by an atlas of 34 plates, containing 294 figures. These, although not executed in a high style of art, are for the most part sufficiently characteristic. Their chief fault is harshness of outline, one, indeed, that has been noticed by the author, but which we are far from thinking so difficult to avoid as he supposes. A reference to the plates in Müller's Physiology, and those which illustrate the papers of Bowman and Barry in the Philosophical Transactions, will evince that British artists have succeeded in successfully transferring to paper much of the natural delicacy of structure as seen under the microscope. The plates illustrative of Mr Gulliver's papers appear to us more carefully got up, and to be more true to nature, than those which refer to the body of the text.

The length to which our analysis of this work has extended, will sufficiently evince our opinion of its merits. Although far from perfect,—although it contains statements and opinions to which we cannot subscribe,—notwithstanding many of the facts it announces are far from having been confirmed, we regard it as a valuable contribution to anatomy and pathology. It presents us with a systematic consideration of the structure of healthy and morbid tissues, written by an individual who has himself minutely examined the textures he describes. It is not a work compiled from the labours of others, but bears the indelible traces of original research and profound thought, and as such must demand the attention of all those interested in the progress of anatomy, physiology, and pathology.

We would fain hope that the appearance of this work will awaken the attention of the profession to the importance of microscopic investigations. The time has now passed when the pathologist can feel satisfied with the vague assertion, that inflammation exists in such or such a texture,—that induration is present here and softening there,—that one organ is infiltrated with pus, another condensed by depositions of lymph, or a third studded with tubercular matter. Knowing the impossibility of detecting in *all cases* the presence of inflammation, lymph, tubercle, &c., by the eye alone, the scientific pathologist now requires more positive information, and demands an investigation into the organised or unorganised particles of which every morbid pro-

duct is composed. By following such a system of investigation, it will be found that we shall be enabled to clear up many of the inconsistencies that at present obscure our comprehension of diseased processes; that we make a vast stride forwards in our pursuit of knowledge; and that, whilst we leave behind us much that is vague and uncertain, we at the same time enter upon a new field, as yet scarcely investigated by the scientific inquirer, and one which holds out the richest prospects of return to those who may diligently cultivate its soil.

On the Treatment of Stone in the Bladder by Medical and Mechanical Means. By R. Willis, M.D., *of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c.* 8vo. pp. 183. London, 1842.

When the title of this work, and the name of its author, first caught our eye, we felt somewhat anxious to ascertain the cause of a separate publication, on a subject with which Dr Willis's name was already well known to the profession. We imagined that since the appearance of his own excellent work on Urinary Diseases, and their treatment, in 1838, and the more recent edition of the standard work by Prout, nothing connected with the treatment of stone in the bladder had occurred in the interval, of sufficient importance to call forth a new book, on a subject apparently exhausted, and already so familiar to all.

A glance, however, at the volume itself, soon showed us, that it was in most respects of a very different character from that already published by the author; that it related solely to the treatment of stone when in the urinary bladder; and that it contained matter of grave importance for the consideration of practitioners. We moreover speedily observed, that the greater portion was a reprint of an article in the *British and Foreign Medical Review* for October 1841, which had already attracted our attention, and in which it appeared to us, that the author had, after a searching and unprejudiced inquiry into the history of lithotrity, given an account of the subject, exhibiting that method of treating stone in a very different light from that in which it had previously been seen by the public at large, as well as by the greater portion of the profession, who had all along exhibited a blind faith in the correctness of every statement regarding this most important subject, whether made by lithotrists, or by those who had casually enjoyed opportunities of witnessing their proceedings.

The present publication has been divided into five chapters, in each of which a different method of practice is treated of. Destroying the stone by solvents, removing it entire by the urethra,

piecemeal through the same passage,—by lithotrity, by lithotomy, and by dilatation of the membranous and prostatic portions of the urethra and neck of the bladder,—lithoctasy, cystoctasy, so named by the author.

The subject of "removal of stone by solution," has naturally attracted a considerable share of Dr Willis's attention, being in some respects more in accordance with his own particular walk in the profession; and he seems to us to prove incontrovertibly, that there is still a broad and interesting path open for investigation to the practical surgeons of the present day, who, as the Doctor justly observes in his preface, have a kind of monopoly of all cases of stone in the bladder, and are consequently the parties having the greatest opportunities of putting the efficacy of any particular mode of practice to the only satisfactory test, viz. that of demonstration on the living subject. The author has referred to the apparent apathy of the profession and of the public, regarding any mode of treating stone, excepting that by cutting, for, although from time to time various means have been proposed, with the view of relieving the unfortunate sufferer, without the necessity of resorting to the knife, it must be admitted, that whether from the inefficacy of the means proposed, or a reluctance to give up such a brilliant proceeding as that of lithotomy, few surgeons of any notoriety have ever given more than a passing thought or a sneer to the subject. "For a long time," says our author, "every means save those of a mechanical nature, appeared to have been lost sight of in the treatment of stone. Surgeons and the public seemed to have persuaded themselves that lithotomy, the operation always resorted to, was neither very formidable nor very dangerous in itself; whoever had a stone in his bladder, was *cut* as a matter of course, and without an effort to procure relief in any other way. Surgery in regard to stone, it might be maintained, has continued in arrear of surgery in reference to almost all the other ills that flesh is heir to; the glory here has not been to avoid any operation, but to have it to do." We greatly fear that there is too much truth in what is here stated, but with whom the blame lies, it may perhaps be difficult to say. The surgeon, however, who will first give this field of therapeutics a full and impartial trial, will, whatever be the result, honourably perpetuate his name.

In modern times no lithotriptic remedy has acquired so much celebrity as that of Mrs Joanna Stephens, for whose prescription Imperial Parliament sought with almost as much anxiety as has lately been evinced for our present premier's. Five thousand pounds were voted for her secret, but, unfortunately, no sooner was it known that calcined egg shells and soap formed the principal ingredient in that once famous nostrum, than all faith in its virtues ceased. We sincerely trust that the prescrip-

tion at present in the state of elaboration, will form a greater boon to suffering humanity. In our own day the waters of Vichy seem deservedly in high repute; and our author has collected the accounts of different cases evincing their potent influence; they appear to owe their efficacy chiefly to the bicarbonate of potash, which they hold in solution. In 1826, their power in rendering the urine alkaline, was made known by M. Darcet, who at the same time pointedly adverted to the advantages that might be derived from their internal use, in calculous disorders. It is to Dr Charles Petit, however, that we are most indebted for illustrations of the effects of the Vichy water, and, until we learn to the contrary, we shall continue to hold them in much veneration. We must desire our readers to look over these narratives for themselves; but, in justice to the subject, we cannot omit quoting one of them, and almost at random we quote case, No. 9.

"Case 9. D. B. Jacob, aged 53, entered the Hôpital Beaujon on the 28th of August 1838, labouring under stone in the bladder, which had tortured him for several years. A fortnight after his admission lithotrity was attempted; the stone was seized several times, and splinters were detached, for many pieces were voided on the day of the operation; but acute inflammation of the bladder having supervened, no second operation could be attempted. Even on the 20th of October the patient was extremely ill, complaining of great weakness, of inappetence, and of a fixed and severe pain in the hypogastric region. The excretion of the urine was frequent and painful, and the fluid deposited a great quantity of purulent and glairy matter.

"On the 20th of October the patient was put upon the use of the Vichy water in the dose of from a bottle and a half to two bottles a-day; almost immediately the urine became less turbid, the appetite and the strength revived, and, by the 5th of December, he felt himself so much better, that he insisted on quitting the hospital.

"On the 8th of March the patient returned to the Hôpital Beaujon with a renewal of his calculous symptoms. On the bladder being searched a stone was readily struck. He was ordered the Vichy water for the second time; but none could be had before the 18th. The course once begun, however, was continued to the 18th of June, the date at which Jacob was visited by the members of a committee of the Royal Academy of Medicine, for the purpose of being examined previously to his being sent to Vichy at the public expense. The stone in the bladder was caught nine different times by means of a lithometer; the greatest diameter ascertained was seventeen lines and a half, the smallest seven lines (rather more than one inch English in length, by something more than half an inch English in breadth or thickness.)

"Placed under the care of Dr Petit at Vichy in the season of 1839, the patient proved refractory, and only followed the treatment prescribed for him very irregularly. Nevertheless, when he was examined on the 30th of September by the committee, the longest ascertained diameter of the stone was but fourteen lines; the smallest eight lines and a half.

"Previously to being remanded in the season of 1840, the stone in this patient's bladder was repeatedly seized by a committee consisting of Messrs Civiale, Blandin, and Bérard, and ascertained to be of the diameters of 13, 14, and 15 lines. The treatment by the Vichy waters, begun on the 23d of June 1840, was pursued with great regularity to the middle of September, the patient taking from twelve to twenty-five glasses of the water and a bath daily, and in addition having a stream of the water sent through his

bladder by means of a double-current catheter, once, twice, and even thrice a-day for some considerable time. In the beginning of August, the patient began to pass fragments of his stone, and at the same time he obtained complete relief from his sufferings. On the 18th of September, he was sent back to Paris, where, having been sounded on two different occasions by the several members of the committee, it was formally declared that there was no longer any stone in the bladder.

"When this patient was first placed under the care of Dr Petit on the 20th of October, he was so alarmingly ill that his life appeared in danger to Messrs Marjolin and Langier, surgeons of the Hôpital Beaujon; M. Marjolin, in particular, recommended Dr Petit to find a patient in circumstances more favourable for a decisive experiment. Had there been any choice of patients, Dr Petit would have followed this friendly advice; as it was, he had to content himself with the man whose life had been brought into jeopardy by the course of his disease, and the ill-advised attempt that had been made to perform lithotrity. These adverse circumstances, however, only make the triumph that was finally achieved the more signal." Pp. 29–31.

It would appear that the solution of bicarbonate of potash, as produced by nature in these waters, is more efficacious than any artificial substitute, and hence it is that patients should resort to the fountain-head, instead of partaking either of the fluid as imported, or of any solution made in imitation. There is another reason pointed out by our author, which ought not to be lost sight of, that, as the benefit derived from the libation seems to be in proportion to the quantity, the diluent effects as well as the dissolvent, (if there be any difference in these two terms in such cases,) are greatly increased by the amount of fluids taken into the stomach. Our author, therefore, recommends a course of mineral water at the spring, as having "the vast advantage of securing the individual whilst pursuing it against countervailing influence of every kind; to say nothing of the circumstance, that the water, costing little or nothing at the fountain-head, is always taken in quantities that would be felt as ruinously expensive if used at a distance." Were it not for the acknowledged respectability of Dr Petit, and the well-known character of Dr Willis himself, we might have our suspicions about the above recommendation of a watering-place; but if there is virtue at all in these waters, (and we ourselves have no doubt on the subject, though we feel assured they will not answer in all cases,) we can well believe the statement quoted, as we have full proof in our island, in which mineral waters abound, that no importation or exportation, or artificial substitutes, are ever equal to the waters direct from nature's laboratory.

In this section of his work, Dr Willis has not confined himself to the consideration of those remedies which act through the constitution, as it were, by conducing to those changes in the urine which give relief, or completely dissolve the stone, whether these be of an alkaline or acid character; but he has devoted particular notice to the advantages which may be derived from similar agents, when applied directly to the concretion, by

injections thrown into the urinary bladder. Though Grinthuisin, Amussat, the Arnotts, and others, had not lost sight of the double catheter, it appears that this invention of Dr Stephen Hales (the practicability of using it having been fully proved by him by experiments on dogs) has been in a manner overlooked by most of our moderns in much practice in stone cases. Sir Benjamin Brodie is one of the exceptions, however; and the success which attended his use of a solution of nitric acid, in so far diminishing the size of two concretions of the mixed phosphates as to permit their escape by the urethra, has often given us cause to wonder why the practice had not been more frequently repeated. To us it appears the more strange, that the method of injecting solvents into the bladder should have had so little notice bestowed upon it, when we are reminded by the case referred to by our author, that this mode of practice was successfully resorted to in the Infirmary of Edinburgh, nearly a century ago, by Dr Rutherford. The menstruum used in this instance was lime water; and considering the success of the treatment, as detailed by Mr Butter, as well as the large number of cases of stone which have, since that date, been treated in the same institution, though chiefly by means of lithotomy, we cannot but again express our amazement that further trials were not given to a plan of treatment, which, if not invariably successful, might, with the most ordinary care, be at all events invariably safe.

Convinced as we are that chemistry will yet do even more than she has hitherto accomplished for the science and art of medicine, we confidently anticipate that something great will yet be done for the class of diseases at present under our notice. Many active minds are now at work on the subject. Prout and Bright still pursue their labours; and whether the stone is to be destroyed by a series of manœuvres carried on within the patient's own system, by a direct attack from the urethra, or by a *coup de main* from both quarters, still remains to be proved by further experience. That cures can be accomplished by one or other of these means, we entertain no doubt; but knowing well the scepticism which prevails on the subject, we must give praise to our author for not hurriedly passing over this part of his topic, but making out a clear case demanding further inquiry, and sufficient, in our mind, to induce the present race of Jaquez's, Côme's, and Cheselden's, to pause in their sanguinary career, and ponder well whether milder means, pursued for months, may not, after all, add more to the brilliancy of modern surgery, than the "minute time" of the most dexterous performance with the knife.

We must refer our readers to the chapter on the removal of entire calculi through the urethra. It seems quite apparent that unless in the female subject, this mode of procedure can never be of much, if, indeed, of any certain benefit. By means of the an-

cient Egyptian method of insufflation described by Prosper Alpinus, by ivory or metallic instruments, or by the sponge tent, the female urethra may be dilated to an amazing extent. In the Museum of the Royal College of Surgeons of Edinburgh, is one of the largest calculi which have been extracted from the female bladder by means of dilatation.

Dr Ramsay of Dundee, the operator, has given an account of the case in the second volume of the Medico-Chirurgical Transactions of Edinburgh, from which we make the following brief extract:—

"About two weeks were spent with very partial success, in dilating the urethra, by means of sponge tents, which were generally expelled in a few hours after their introduction; but they sometimes remained during the course of a night, though not without much inconvenience and distress. The common polypus forceps, and afterwards a better instrument, (commonly used for extracting balls), which Dr Thomson was so obliging as to send me, were tried with better effect. But in Weiss's dilator I found an instrument well suited to its purpose, and succeeded in expanding the urethra more and more every day, from twenty to thirty minutes at a time, until, in the course of ten days, I could easily introduce the fore-finger within the urethra, and examined with sufficient accuracy the figure, size, and surface of the calculus.

"Prior to extraction, I introduced the dilator, in the presence of Mr Crichton and Dr Nimmo, and turned the screw very gradually, until, in the course of about thirty minutes, I had opened the blades sufficiently to admit the flat side of the forceps within them. The dilator was then withdrawn. I fortunately seized the stone in the best manner for its extraction, which was accomplished with some difficulty, and a good deal of pain to the patient. The chief resistance was found at the orifice of the urethra, and was at first so great as to render it doubtful how far the bistoury might not have been advisable; but as this might have defeated the great object in view, I persisted a little longer, and effected the extraction without its aid.

"From the size of the stone, (which we found to be $5\frac{1}{4}$ inches in its long circumference, and $3\frac{1}{4}$ inches in the short, and weighing $7\frac{1}{2}$ drachms), I apprehend it would have been impossible to have extracted it in this way, without rupturing the urethra, had not the dilatation been effected in a very *gradual* but *decided* manner for some weeks previous to the operation.

"A good deal of general irritation prevailed in the system for a few days after the removal of the stone, with pain and swelling of the parts; but these symptoms soon gave way; not, however, without considerable mucous and puriform discharge from the vagina, with some membranous sloughs, which seemed to give considerable uneasiness, by obstructing the free passage of urine.

"The bladder and urethra very quickly resumed their natural functions. The power of retention, which, from the first, was never lost, has ever since remained perfect; and all the distressing symptoms depending upon stone in the bladder entirely left her after the operation."

Without stopping to inquire into the probable results of excessive dilatation, we shall hasten to give our opinion, that the value of the practice of removing small calculi through the male urethra, has been much overrated. Such cases as the celebrated one, in which Sir Astley Cooper removed eighty-four small calculi through the urethra, by means of an instrument, are truly of rare occurrence. We should deem such an instrument a most

dangerous weapon in less expert hands, and, taking into consideration the variety of circumstances, which, in almost every example of urinary disease, must render such means totally inapplicable, we never could concur in opinion with those who have supposed the urethra forceps of much general utility. The rare event of a small stone following the point of a bougie, as it is withdrawn from the bladder, or the escape of a few particles of gravel through the eye of a catheter, are facts which every surgeon ought to be aware of, but for every such example of either one or other of these events, it would not be difficult to adduce many, to prove that stones have in general not evinced such a ready inclination to quit their quarters. No one can appreciate more highly than we do, the great authority on which such means of relief have been introduced,—Dr Hale's, John Hunter's, Sir William Blizard's names ought to, and do go far in any such topics; but we cannot agree with Sir Benjamin Brodie, in believing that what was done by Cooper is among the greatest achievements of modern surgery; and we feel more inclined to entertain the views of Deschamps and Professor Syme, both of whom, in the words of Dr Willis, think it "highly injurious" (Syme,) "imprudent and murderous" (Deschamps.) We must apologise in some measure for acquiescing in the expression referred to the latter. We only quote, but this much we must say, that during an experience of nearly twenty years, we cannot affirm that we have seen great results from the "urethra forceps," and it seems apparent to us, that had they been of the utility which some have claimed for them, the more modern operation of lithotrity would have been without some of its most objectionable features, viz. the difficulty of getting the small fragments away from the bladder, after the mass of the stone has been comminuted.

The chapter on lithotrity is evidently our author's *chef d'œuvre*, and it seems to us, that this operation has given him the apology, as it were, for going over ground already well known to those who have paid much attention to the history of the treatment of stone in the bladder.

Though it is more than thirty years since Gruithuisen sugges ted the practicability of removing stone in the bladder by mechanical means,—though the celebrated case of Colonel Martin had been made public in 1799, by the late Sir John Sinclair,—though Elderton, in 1819, gave the first description of what may be called a lithotritic instrument,—though there has been neither lack of talent, nor (we regret to say) time to bestow in research, in the body of the profession, it is evident, that up to the present date, the whole subject of lithotrity, since its first performance in 1824 by Civiale, has been, in a manner, totally neglected in England. Whilst the press in France has teemed with memoir after memoir,—whilst there, too, the professed lithotritist and the

already accredited surgeon, have each laboured in this interesting and novel field of art and science, our own countrymen have stood listlessly, and, we may almost say, stupidly looking on, even up to the present day. It is true, that the operation has been frequently done by British surgeons, but it is equally true, that they have merely followed in the wake of their continental neighbours. We have had no Amussats, Leroys, or Civiales in our country; no commissions issued by our corporate bodies, to report on the progress of the art; none of our Percys, Boyers, or Larreys have given more than the daily routine thought to this most engrossing topic. Every assertion made by the professed lithotritist has been silently taken for granted; the observations of such practical men as Souberbielle and Velpeau have been passed over in silence; lithotrity has been practised here on such authorities as the printed works of Leroy, Civiale, Bancal, &c., the exhibitions of Heurteloup and Costello, or the more vague reports of the medical student. We have had no Hunters, Hornes, Abernethys, and Coopers, to pioneer us on in lithotrity, as in the subject of aneurism, and now, almost at the eleventh hour, and when lithotrity has in a manner established a reputation as a grand substitute for the well-known and dangerous proceeding of lithotomy, an English physician steps forward, throws down the gauntlet to the professed lithotritists, and actually (and with their own weapon, too) exposes and breaks up a system of deception and equivocation, to which the history of the mysteries of Stephens can scarcely afford a parallel.

We profess ourselves, on the present occasion, to advocate neither one side of the question nor another, but we cannot help expressing the powerful effects which Dr Willis's observations have had on our mind. In giving acquiescence to the general deductions drawn by our author, we shall leave it to himself to settle with Messrs Civiale and Company as best he may. We have our own ideas, that the Doctor will be found by the lithotritists, what in England is called "a tough customer;" but under any circumstances we have only one duty, in honesty, to perform, and, with the evidence before us, it is impossible that we can draw any other conclusion, than that the success of lithotrity has been much overrated, and that consequently the proceeding itself has been greatly abused, both by its own advocates and those who have heedlessly followed in their course.

Our limits will not permit us to follow the close reasonings of our author on this part of his subject, but we feel that we owe it as a duty to the profession, to recommend a careful perusal of this chapter. We do so, in the conviction that the results of lithotrity have not, as yet, been fairly put before our readers in large aggregate numbers, and also that this part of the work is of such a nature that the subject cannot be allowed to rest here,

We must permit Dr Willis to speak for himself, however; and with regard to M. Civiale, to whom he naturally refers as the highest authority as a lithotritist on this question, he states:—

"In his Traité de l'Affection Calculeuse, p. 613, he speaks of the number of persons affected with calculus who had sought his assistance up to the year 1836. They amounted to 506. Of these 199 were either unfit subjects for lithotrity, or were otherwise prevented from submitting to the operation. Supposing the whole of the 199 to have been really unfit, this would be in the proportion of one in two and a-half very nearly, to whom lithotrity held out no chance of relief, or who, were they subjected to the operation, would almost certainly lose their lives. We have, therefore, 307 subjects favourable for the operation. Of these, says M. Civiale, (op. cit. p. 630,) 296 were completely cured; 7 died; 3 were only partially relieved; and in 1 the issue is not known.

"But when we turn to such public documents as we possess, we are amazed to find how little the conclusions as there stated accord with the numbers of M. Civiale. In a report presented by Barons Larrey and Boyer to the Royal Academy of Sciences in the month of April 1837, upon a *comte-rendu* or statement in regard to the patients affected with calculus confided to the care of M. Civiale at the Hôpital Necker, we find it stated with something like a censure, that M. Civiale should have confined himself to the mention of five cases, in which he had recurred to lithotrity with a success more or less decided; but passed by in silence the patients who underwent the operation of lithotomy, (after having been vainly essayed by lithotrity), so that, say the reporters, 'we should have remained in complete ignorance of the fate of these individuals had we not seen the *movement* of the Hospital, which M. the Controller was obliging enough to lay before us. We find,' continue the reporters, 'that 24 patients (not 16, as stated in M. Civiale's comte-rendu) had undergone the operation of lithotrity or lithotomy. Of these 24 patients, of whom *six* were cut [after lithotrity had been essayed in vain,] *eleven* died more or less immediately after the operation.' *Eleven* deaths in *twenty-four* cases immediately after the operation! Verily there is little to boast of here, and we can already afford M. Civiale 'seven deaths in 307 cases!' and yet find four at our disposal to carry to the next account.

"Let us go on to public document the second. This is a report to the Royal Academy of Sciences, presented by Messrs Boyer, Double, and Larrey, upon the operations performed at the Hôpital Necker during the years 1831 and 1832. 'Fifty-three patients affected with calculus were received at the hospital. Of this number twenty-seven treated by lithotrity were discharged completely cured; sixteen having had various attempts at lithotrity made upon them, the operation was definitively found impossible, or useless, or it proved fatal. Of these sixteen, ten died and six remained unrelieved. Eight other patients were subjected to attempts at lithotrity and then to lithotomy; of these five died and three recovered.' If we analyze this statement, we find fifty-three receptions and twenty-seven recoveries; which is as nearly as possible one recovery in two cases by means of lithotrity; but as three recovered by means of lithotomy after the failure of lithotrity, we have three to add to the list of cures, which therefore amount to thirty in all. On the other side, we find ten deaths as immediate consequences of lithotrity, and five more after lithotrity and lithotomy combined, that is, fifteen deaths in all. Eight cases remain unrelieved, which must terminate fatally within a brief period, all the more quickly, for the sounding, &c. which the subjects of them doubtless underwent at the Hôpital Necker. *Fifteen* dead, *eight* unrelieved and expecting death, make *twenty-three* cases of non-success to *twenty-seven* of success by lithotrity. Surely neither is there aught to be proud of here; the cases in which no relief could be afforded were actually within *four* of being as numerous as those in which

lithotrity was found of avail! and this is an operation that boasts of all but invariable success! of 'three hundred and odd cures to seven untoward results!'

"Turning from public documents, let us see what some of M. Civiale's contemporaries have made out by an analysis of his cases, somewhat more rigorous than his own. M. Velpeau, than whom there is no more honourable man or trustworthy writer in France, has given an analysis of five series of M. Civiale's cases, and I here append his table:—

Series.	Number of Cases.	Cured.	Dead.	Unrelieved, the stone remaining.	Otherwise. Success in	Otherwise. Failure in
1st.	83	41	39	3	41	42
2d.	24	13	11	0	13	11
3d.	53	30	15	8	30	23
4th.	30	18	8	4	18	12
5th.	16	6	7	3	6	10
	206	108	80	18	108	98

That is to say, of 206 patients operated on, 108 (a very little more than *one in two*) recover immediately; 80, or nearly *one in two and a-half* die; and 18 retain the stone, and will be lost. *One hundred and eight cases cured, to ninety-eight, in which death is immediately induced* or may not be averted within a brief interval of time. This is a very different tale from the one told by M. Civiale himself; the reader may adopt the conclusions of whichsoever of the two statements he pleases. There can be no question as to the one than conveys the truth.

"But M. Civiale can readily be convicted of misstatement out of his own mouth, or by the act of his own pen; indeed, it is from data furnished inadvertently by himself that M. Velpeau has arrived at the conclusions as just given; and whoever will be at the trouble to turn to the work, entitled '*Parallele des diverses moyens de traiter les calculeux*,' will straightway find himself picking his steps over a sort of battle-field. In ten pages of the preface he will meet with a registry of *eight deaths*, and between the 12th and 65th page of the body of the book, no fewer than *fourteen failures* make their appearance,—twice in a single page, there are records of two disasters.

"I am charitable enough to seek for some means of accounting for the singular discrepancy between the reports of M. Civiale and the statements of contemporaries. Men do not usually come openly before the world with an unmitigated falsehood in their mouths; they can generally explain their statements. In regard to lithotrity the explanation is this: All the cases in which the process is essayed, but unsuccessfully, in which one or two, or even three attempts have been made to seize or perforate the stone, and even in which it has been seized and perforated once or twice, but in which it is found impossible to proceed in consequence of pain, of inflammation excited in the bladder, &c. &c.—all such cases are thrown out of the account; *in them lithotrity was not performed*,—those that die under these circumstances *die before the operation*, or from some other cause than the operation.—Where men are deeply interested, where they think their reputation is at stake, they deceive themselves, and then they try to deceive others. So respectable a surgeon as Mr Martineau, who prided himself on his success as a lithotomist, thought that he did not select his patients. 'In this number, (eighty-four cases in which he had performed lithotomy) he states that 'no selection of patients was made, as I never rejected any one who was brought for operation.' (Med. Chir. Trans. vol. xi. p. 409.) But what is the language of his contemporaries? Let us consult Mr Crosse: 'During the many years

that I witnessed Mr Martineau's public practice, he carefully selected his patients;' (On Urinary Calculus, p. 155.) Unless he had a great chance of success, therefore, he never ran the risk of failure. In charity we must presume that it is the same with M. Civiale, although candour also compels us to admit that, however emphatically warned, he will not consent to be set right.

"The following case, which is given by M. Civiale (Parallele, &c. p. 337) to illustrate the ill effects of *simply sounding the bladder!* will serve me sufficiently well to corroborate the above views and statements:—

"M. Bizouard, aged 65, though he had long suffered from symptoms of stone, had such a dread of everything in the shape of a surgical operation, that it was only when fairly vanquished by his sufferings that he would consent to have his bladder searched. This being done at length by M. Hervez de Chegoin, a stone was struck. M. Civiale being called in a few days afterwards, ascertained, without any difficulty, that the bladder contained a foreign body, of about the size of a large walnut. The urethra was sensibly contracted below the pubic arch, and the prostate was larger than natural. Some preliminary treatment, the necessity for which was indicated by the character of the patient and the irritability of the parts, was then had recourse to. '*An exploration of the bladder, made by means of the instruments of lithotrity,*' says M. Civiale, 'convinced me subsequently that it would be an extremely difficult matter to crush the stone, in consequence of its size, the enlargement of the prostate, the small capacity of the bladder, and the general irritability of the subject. *This perquisition was long and painful. It was followed by a little fever, difficulty in making water, &c.— These accidents never subsided.* Lithotomy was proposed to the patient as his only resource. A consultation was therefore called, and lithotomy was determined on. The day was fixed, the patient had the perinæum shaved, he was laid on his bed, and the sound was passed as the first step in the operation, but no stone could be discovered. It was searched for in vain by more than one experienced hand; the patient had to be put to bed again. Inflammation of the bladder now set in, and the patient died four days afterwards. 'Nous trouvons là,' continues M. Civiale (l. c. p. 378,) 'une preuve éclatante que les explorations pratiquées au moyen du cathéter ordinaire peuvent être plus dangereuses que celles pour lesquelles on employe les instruments de lithotritie.'

"Now, I hold this case to be extremely valuable; it gives us a key to M. Civiale's mode of intepreting his practice. This particular case would not be set down by him in connexion with lithotrity at all—there was 'a mere *perquisition* of the bladder.' But when we look with unprejudiced eyes to the whole circumstances, we see that there was a very determined effort to seize and crush the stone in the first instance; this was found impossible; but the futile attempt was followed by local inflammation and general symptomatic fever, 'which never subsided,' and the patient fell into such a state, that he must be relieved of his stone or die; the searching of the bladder by the simple sound, preparatory to the performance of lithotomy, rekindled, or rather aggravated the inflammation which had been originally lighted up by the vain attempt to perform lithotrity, and the patient was the victim.

"The nature of what the lithotritists entitle preliminary examinations—or, to adopt their own French word, *perquisitions*—which all the world save themselves regard as very determined efforts to drill or crush the stone, has been spiritedly sketched by M. Velpeau. 'Let us see,' says M. Velpeau, 'what these preliminaries are in fact. They introduce the litholabe, the lithontriptor or the percurator into the bladder, where its point is moved about to ascertain the existence and the position of the stone. They then open the instrument, its branches are separated to seize or embrace the foreign body, and to appreciate its size and its form. They then endeavour to perforate, to crush, or to fracture the stone by acting on the other and outer end of the

instrument, which is thick and straight within the urethra. All this is done once, twice, or three times at intervals of a few days. And now, doubtless, some one will ask, in what the operation properly so called differs from these preliminaries! *Ma foi, je n'en sais rien!*"

"Let us go further, and ask M. Civiale himself, in a couple of instances or so, what he understands by patients who had died 'without having had any operation performed on them?' Let us take the case of Lecomte, for instance, and see what is stated in certain private records of the Hôpital Necker, which M. Velpeau seems to have got a sight of, for he puts what follows within inverted commas, and adds in a note that he hopes that M. Civiale will not dispute the accuracy of the statements, as he will have no difficulty in divining the source whence they were derived.

'This patient (Lecomte) had suffered from stone for two years, and had an ample urethra: the intention was to have begun the operation on the 5th of June 1830. The instrument was passed into the bladder previously injected. Acute pain was experienced in the region of the prostate. Scarcely had the instrument been expanded when the pain became intolerable. The instrument had to be withdrawn before the stone could be attacked. From this time there were incessant calls to micturate, accompanied with tenesmus and excessive pain during the emission of the urine. *Death* on the fifth day afterwards.'

"There is room for farther selection. Here is another where matters were as bad, though the issue was complicated by lithotomy, which became necessary to give the man a chance for his life, which, unfortunately, he lost nevertheless. 'Godailler, aged 57, had suffered from stone for three years. The instrument was introduced the 17th April 1830, and the stone charged with the greatest ease; *the drill was worked.* After this operation the calls to urine became extremely frequent; in the evening the patient had a rigor, and then he was attacked with fever. A second *sitting* took place on the 24th; the febrile paroxysm returned with renewed violence; the urine, loaded with mucus, acquired a sanguinolent tint. The state of the patient getting worse and worse, he was cut (and died).' Now, the death of neither of these unhappy men is ascribed to lithotrity. Lecomte died without having had any operation performed; Godailler died of lithotomy—according to M. Civiale!!

It would appear from our author, that only two British surgeons, among the many who must have practised this operation, have given any thing like a narrative of their experience or practice. Mr Fergusson and Mr Key, in his estimation, and likewise in our own, are entitled to much praise for the candour of their statements; but it appears to us, that, much as we esteem their authorities on any subject relating to stone in the bladder, there is still much wanting on the part of our brethren to give a strictly professional tone to the whole question. With all due respect to Heurteloup and Costello, we deem it no disparagement to them that, in addition to the two surgical authorities among our countrymen, quoted by Dr Willis, we should ask the opinion of such as Crampton, Brodie, White, Guthrie, Liston, and a host of others, whom we know to have practised this operation, and who are among the acknowledged heads of surgical science and art in Britain.

The distinguished Civiale is certainly handled in a somewhat rough manner,—drilled and triturated like an offending stone,—

and has had the *brise-coque* of Dr Willis applied to him with might and main; a proceeding which could not be avoided, were justice to be done to this most important professional question. Like many physicians, Dr Willis leans to "mild measures." He gives a favourable view of the little that has been done by modern scientific men towards dissolving the stone; he speaks in terms of commendation of the method of removing small calculi by the urethra, with the aid of forceps, dilatation, &c.; and on the assumption that lithotrity is a milder method than lithotomy, he gives what he considers a fair estimate of the effects of the former operation,—effects which he proves to be actually more disastrous than those of lithotomy. He is neither lithotomist nor lithotritist himself, and unless it be to do justice to the public and to a great professional question, overlooked previously by the great body of his contemporaries in Britain, it is difficult to perceive any reason for the vast trouble which he must have given himself in collecting the data on which his opinions are founded.

The chapter on lithotomy presents us with nothing sufficiently new for our present consideration.

By the novel terms of lithectasy, cystectasy, our author refers to a modification of the ancient Marian operation for stone, with the apparatus major, which seems to have been first proposed by Mr John Douglas in 1727, when he expressed his opinion that "artificial fistulas in males, and in the urethra in females, may be dilated so as to extract any stone without cutting the body of the bladder or lacerating any of the parts." Instead, however, of dilating or tearing open the parts about the neck of the bladder, as was done by Marianus, it was proposed to enlarge the opening in a very gradual manner; and the plan was actually carried into execution in 1819, by Sir Astley Cooper, at the suggestion of Drs Neil and James Arnott. The subject of this operation was—

"A gentleman of middle age, who had some nine months previously undergone the usual operation for stone, in the course of which the rectum had been wounded, so that a fistulous opening remained between the bladder and the bowel, feces passing with the urine and urine escaping with the feces. In this state, and still suffering much from pain and irritability of bladder, the patient placed himself under the joint care of Drs Neil and James Arnott, and Sir Astley Cooper. With a view to cure the fistulous communication between the urethra and rectum, Sir Astley Cooper made an opening into the urethra from the perineum, by which he passed a female catheter into the bladder, and immediately struck a stone. As it was likely to be small, Sir Astley did not object to the proposal now made by the Drs Arnott, to try the effect of the new dilator in opening the passage for its removal. This instrument was accordingly used, and in the course of thirty hours the passage in the perineum, the membranous portion of the urethra, and the neck of the bladder, were opened up till they were about two inches and a quarter in circumference, or three quarters of an inch in diameter. The lithotomy forceps was then introduced by Sir Astley Cooper into the

bladder, and the stone immediately felt, seized, and extracted. It was as large as a middling-sized walnut.

"This operation was eminently successful. During the process of dilatation the patient had an uneasy feeling of distension, but nothing approaching to pain. In four days all the irritation of the bladder had subsided; the patient was able to retain his urine, and left his bed-chamber. On the ninth day the wound in the perineum was whole, and he began to take exercise abroad." Pp. 71, 72.

A somewhat similar operation was performed by M. Guérin, surgeon to the General Hospital of Bourdeaux, who, however, instead of limiting the incision to the raphé of the perineum, between the bulb and the sphincter ani, divided the latter part with the rectum, at the time of making the wound in the perineum. From the evidence afforded by these two cases, Dr Willis draws the conclusion, that the free wound in the prostate, or the sudden process of dilating or tearing the neck of the bladder, is now no longer necessary. It appears to him, "that with this operation at command, stone in the bladder has already lost a great proportion of its terrors. There is hardly a case to which it is not applicable, and its application is without danger, immediate or prospective. The brief interval of from four-and-twenty to eight-and-forty hours, is all that is necessary to begin and end the operation; and this with no doubtful prospect,—it cannot end otherwise than well. Even if we found a stone of five or six ounces in weight, we should feel neither embarrassment nor alarm. We never should think of extracting such a mass entire, indeed; but we have an aperture of two, or, if we choose, of three inches in diameter, and a canal of little or no greater length, through which we can introduce an Earle's, or any other commodious instrument for breaking up large stones in the bladder, and reduce it to fragments in a twinkling." We sincerely wish, for the sake of our suffering fellow-creatures, that we could conscientiously acquiesce in the Doctor's opinion; but alas! it appears to us that he has drawn his conclusions from premises far too limited in extent. From the time of Douglas (1727), up to 1819, no one seems to have attempted the operation, and this for a period when England possessed its highest authorities in cases of stone, from Cheselden to Sir Astley Cooper himself; and what is also equally remarkable, it does not appear that the last-named distinguished surgeon, even with his almost unlimited practice, had ever again resorted to a similar proceeding. Far be it from us to decry what may reasonably be thought likely to diminish the risk to life, in any attempt to rid a patient of stone; nevertheless, we cannot but say that mere arguments alone will not convince us on this most important point; and with a full reliance on the authenticity of the two cases we have quoted, as the only two on which our author has founded his apparently correct conclusion, we must yet ask for further reasons, and that, too,

from the surgeons of the present day, that this mode is to be preferred to the lateral operation as now done in this cou itry, whether with gorget, bistoury, or scalpel.

We close this volume in a very different spirit from that in which we opened it. The physician has proved that he possesses an ample knowledge of a great surgical question: but he has left the subject of lithotrity in such an equivocal position, that it seems equally incumbent on lithotritists as on surgeons, to come to some issue. We can no longer listen with implicit confidence in the statements of a Civiale, (as our author has now exhibited them,) nor is it in accordance with the dignity of our own surgeons to allow the vulgar saying still to pass current, that Sir So-and-so, Mr This, or Mr That, says that "lithotrity is a most excellent operation; that it is not understood by the generality of our surgeons, *but that in their own individual practice it invariably proves efficient?*" We beseech our surgical brethren, who have had experience, to speak out. Meantime we heartily thank Dr Willis for his talented treatise, of which we take leave, by earnestly recommending to the careful consideration of our readers.

PART THIRD.

PERISCOPE.

PRACTICE OF PHYSIC AND PATHOLOGY.

ON A PARTICULAR PATHOLOGICAL CHANGE IN THE SUBSTANCE OF THE BRAIN. BY DR DURAND FAREL.

IT is well known that certain parts of the surface of the brain (among others, that on the inner side of the sylvian fissure, called from this very circumstance, the *lamina cribrosa* or *substantia perforata*,) present a cribriform appearance, being pierced with numerous small orifices through which vessels pass from the *pia mater* conveying blood to the cerebral substance. Where the vessels of the brain have been successfully injected, we can easily perceive a vessel occupying each of these orifices,—filling it completely if distended with the injection, otherwise lying in it but loosely. M. Farel states, that in certain cases of disease, he has observed a similar appearance after death in the white substance of the hemispheres, and occasionally in the medulla oblongata and spinal cord. He looks upon it as a peculiar pathological change, and proposes to distinguish it by the title of *cribriform state of the brain*. The following is his description of the appearance in question:—"When we make a transverse section of one of the hemispheres, we see the white matter perforated with a great number of small rounded holes well defined in their circumference, while the cerebral substance around them is usually quite healthy, and presents no change in colour or consistence. Their distribution is very irregular,—being sometimes scattered ere and there over a considerable surface, at others collected in small groups, each of which may contain a greater or smaller number. They vary in size,—some appearing as if made by pricking the cerebral substance with a fine needle, others capable of admitting the head of a small pin. If a stream of water is directed upon them, they do not change their form, continuing always gaping and sharply rounded; but when placed under water, or subjected for some time to its continued action, a small lacerated vessel will be observed to issue from them, and to float in the water. These orifices, then, thus exposed to view on making a section of the brain, are simply the divided mouths of canals traversing the nervous substance, and containing each of them a vessel." He proceeds to explain, that the canals here spoken of are formed by the vascular branches which penetrate the substance of the brain, and which soon establish for themselves there permanent channels. In the state of health, particularly in children and adults, they are to be detected only on those points of its surface referred to in the outset of these remarks as presenting naturally a cribriform appearance, for nowhere else are the vessels of sufficient size to permit the channels they have made for themselves to remain visible when, as is commonly the case after death, they have ceased to be distended with blood. In other parts of the brain we cannot distinguish

them, unless in some instances by the colour of the blood contrasting vividly with that of the nervous substance; and we are even in the habit of regarding that as a morbid state, in which a quantity of blood penetrates the brain, sufficient to enable us to detect a considerable number of these vessels by the eye. In old persons the vessels which penetrate the cerebral substance are generally larger: in them, therefore, it is not uncommon, on a section of the hemispheres, to find some approach to this cribriform state. It is, however, chiefly in the *corpora striata* that the effects of old age in the dilatation of the vessels, and the effects of this last on the cerebral substance, can best be studied. The *corpora striata* in old persons are often traversed by canals of considerable size, each containing a vessel, which, being void of blood, seems out of all proportion small in comparison with its channel. As these canals follow a tortuous course, it often appears, in making a section of the *corpus striatum*, as if it contained small detached cavities; but with a little attention we never fail to discover their continuousness with one another, and to detect the vessel contained in them. The author recommends these appearances in the *corpora striata* of old persons to the particular attention of pathologists,—being convinced that the dilated and tortuous vascular canals have been often mistaken and described for those small anomalous cavities which Morgagni has pointed out, and of whose nature we are still ignorant.

From all this it appears, that a preternatural enlargement of the canals which the vessels penetrating the substance of the brain have formed for themselves, is the cause of the cribriform appearance in those parts of that organ which do not usually present it; and that this enlargement of the canals must be owing to an increase in the calibre of the vessels. Now, whenever a sanguineous congestion takes place in the brain, there necessarily follows a degree of dilatation of the vessels. This, however, is but temporary, and on its subsidence, whether from the emptying of the vessels after death, or a restoration of the natural balance of the circulation, the over-distended channels resume, by means of the inherent elasticity of the brain, their usual calibre. Nevertheless one can conceive how frequent congestions may ultimately leave in the canals traces of the repeated dilatations they have undergone, permanently enlarging their calibre, and, when the vessels become emptied after death, giving them a void and gaping appearance.

Hence we arrive at the conclusion, that the cribriform state of the brain is simply the result of chronic congestions of that organ.

In support of this view, the author relates a number of interesting cases, chiefly occurring in the insane, where the cribriform state was found either alone or in conjunction with other morbid changes. The two cases in which it occurred alone, were, the one a case of simple *dementia*, the other of *dementia* with general paralysis. He also relates cases in which it was found along with that form of *ramollissement* described by Calmeil as peculiar to the general paralysis of the insane,—others where it accompanied induration of the brain, and appeared capable of accounting for certain of the intermittent symptoms they presented,—and, finally, cases where it occurred either around or in the substance of partial *ramollissements* of the brain.

A lesion of this nature is one which may easily escape the notice of those whose attention has not been directed to it,—and the author thinks it possible that it may have existed in some of those cases which have been placed on record, as striking examples of the existence of severe cerebral disease, without any morbid lesions with which it could be connected being found after death.—*Gazette Médicale de Paris*, 8th and 15th Jan. 1842.

Phlegmasia Alba Dolens (?) in a Man.

A preacher, aged 32, was attacked, on 23d March 1840, after exposure to cold, with pleuro-pneumonia. For some time previous, there had been unequivocal symptoms of tuberculous deposition at the top of one lung, not-

withstanding which, he recovered perfectly from this attack of inflammation. But on the night of the 11th April, he was seized with a most excruciating, as it were, rheumatic pain in the course of the right sciatic nerve, which prevented all motion of the leg on that side. A blister and ointment of veratrine were applied, and the pain subsided. On the 20th of April, however, a similar pain attacked the left leg, and despite of cupping, an incipient phlegmasia alba dolens appeared on the foot and lower leg. By the 25th of April, the inflammation had extended itself so as to occupy the popliteal space, and afterwards spread even to the right half of the scrotum. Various palliatives were administered without any permanent good effect. From the 27th April the swelling, pain, and tension of the *phlegmasia* (? German) declined, and in the lower part of the limb rather took on the character of simple œdema, and the appetite began to return. On the 29th, however, the patient was attacked with violent epistaxis—his strength rapidly declined, his breathing became more and more oppressed, and he died on the 4th May.

Autopsy.—On both lungs there were small unsoftened tubercles. All the veins of the affected extremities were plugged up with a thick tough grumous clot, making them hard, firm, and dense to the touch. This peculiar coagulum extended to the vena iliaca, and even to the vena cava ascendens. There was not the *slightest trace* of thickening of the walls of the affected veins, or any other mark whatever of previous inflammation.

From the state of the clots in the different veins, it seemed that the vena iliaca was the original seat of the disease.—*Hannoverische Annalen*, v. Band 2 Heft.

Ileus, in consequence of Hypertrophy of the Pancreas, producing Stricture of the Duodenum.

A country gentleman, of strong appearance, had felt for six or eight months, a sense of weight in the region of the stomach and navel, which prevented him moving at all after eating, as this gave rise to great uneasiness; he was in the habit of drinking great quantities of water, and experienced much relief from eructation. Four days previous to N. (narrator of the case,) seeing him, which was on the 20th July, he had indulged rather freely at an entertainment in the neighbourhood, and after having driven home somewhat late at night, he took a vomit, with effect; but instead of being relieved, he became gradually worse, and soon presented all the symptoms of ileus, without any of those of inflammation. Despite of the usual remedies, he died 22d July.

Autopsy.—There was no trace of inflammation, nor of effusion into abdomen. The pancreas, however, had lost its natural appearance, and exhibited a soft succulent fleshy aspect, without any scirrhous or tuberculous deposition; it was enormously hypertrophied, being almost as large as the head of a fœtus of four months old, and had so completely inclosed almost three inches of the duodenum, that this had become so narrowed as hardly to admit a goose quill. Between this stricture and the pylorus, the duodenum was expanded into a sort of second stomach, where no doubt the contents of the stomach remained, until so diluted as to pass the stricture; hence the patient's insatiable drinking propensity.—*Hannover. Annalen*, Bd. v. 2 Heft.

[Diseases of the pancreas are very rare, and consequently each case is of importance. For information regarding this subject we may refer to Abercrombie on the Stomach, &c. p. 417, ed. 1830. Bigsby in Edin. Med. and Surg. Journal, vol. xliv., (1835,) p. 85; and also to Craigie's Practice of Physic, for authorities and original cases.]

Case of Complete Obliteration of the Aorta. By Dr Roemer, Professor of Anatomy at Vienna.

An officer, high in rank in the Austrian army, who had served during the war from 1770 to 1815, and had always enjoyed good health till his 45th year, went at that time to reside at Mayence. He then suffered frequently from dyspnœa and gastralgia, but did not apply for medical advice until he had had several attacks of threatened suffocation, and his stomach had refused to receive every kind of food. During a year he was treated homœopathically, without benefit. Severe palpitations then came on, accompanied by œdema of the extremities. The continued use of bismuth and digitalis made the dyspnœa and vomiting almost entirely disappear, but the pulse continued rapid, vibrating, and full. As his decease approached, he was seized with hoarseness and a small dry cough; and at last he expired suddenly in his fiftieth year, while playing at whist.

Post-mortem examination.—The contents of the cranium were healthy, with the exception of a softened and exsanguine state of the brain, and ossification of the basilar artery. Four ounces of serum were found at the base of the skull. The heart was considerably hypertrophied; the valves were healthy. The aorta, as far as the origin of the arteria innominata, was much dilated, which latter was almost twice its normal size. The subclavians and the left carotid artery did not appear unnaturally large. The coronary arteries were ossified to the extent of about three inches. From the origin of the arteria innominata, to the point where the ductus arteriosus enters, the aorta became gradually smaller, and at this latter spot the diameter did not exceed half an inch; it was there found obliterated to the same extent; its thoracic and abdominal portion was hardly as large as that of a child ten or twelve years old; the walls of these vessels were evidently thickened. The intercostal arteries, which arose below the obliteration, had nearly the diameter of a quarter of an inch, and communicated freely between the third and fourth ribs, with the mammary and thoracic arteries. It was by means of these anastomoses that the collateral circulation was established; the pulmonary arteries were greatly dilated; the left laryngeal recurrent nerve was greatly stretched, and the turn which it makes round the aorta corresponded to the obliterated point of that vessel. Biliary calculi were found in the gall-bladder. The lungs and other organs were healthy.—*Arch. Gén. de Médecine*, Dec. 1841.

On the Connexion of Scarlet Fever and Dysentery, in Berlin, in August and September 1840.

Dr Philipp, a practitioner in Berlin, describes the scarlet fever as prevailing epidemically there from March to August. In August, this epidemic began to give way to dysentery, which, from that time to September, supplanted the former. The dysentery arose in exactly the same localities as those in which the scarlet fever had appeared, followed exactly the same direction, spread in the same streets, and tarried longest in those houses where that disease had most prevailed. Indeed, this succeeding epidemic followed literally the very footsteps of the retreating scarlatina. The partiality of certain localities for both epidemics, was manifested in this circumstance also, that on the retirement of the dysentery, the scarlatina returned with renewed severity.—*Caspar's Wochenschrift*, 1840, No. 45.

Cases of Hemorrhagic Diathesis. By Professor Quadrat, of Prague.

Case 1. A woman, 34 years of age, without children, had suffered for four years past, from hemorrhagia depending upon abdominal plethora, charac-

terised chiefly by a swollen state of the veins of the rectum and os uteri. Her mother and two of her sisters had suffered from a similar complaint. At the age of 16, she first menstruated. The flow of blood was most copious; and, as it diminished, she was attacked with pulmonary hemorrhagy. She always lost a greatdeal of blood from the slightest wound. When she was 19 years old, a remarkable phenomenon occurred, which lasted for the space of six years. On the evening before the catamenia appeared, the last phalanx of the index finger of the right hand became swollen and painful to the touch; it presented at its extremity a bright red spot. In some hours this became painful, which only ceased on the sudden appearance of a jet of red blood. The bleeding continued from a quarter to half an hour, and recommenced after an interval of an hour. This state of matters lasted from three to four days, the ordinary duration of her menstrual discharge. The hemorrhage could not be completely arrested either by cold or compression. The jet of blood, which rose to the height of from five to eleven centimetres, increased in force when the finger was put into tepid water. During its flow, the catamenia only came away by drops, but they flowed more freely as it ceased. The skin of the finger became soft and spongy, as it were, but not altered in texture. Since the last appearance of the hemorrhagy from the finger, on which occasion it bled for two hours, and to such an extent, that the patient was almost in a state of syncope, various but not periodical attacks of epistaxis have occurred, which again are succeeded by the hemorrhoidal state of the uterus. The last phalanx of the affected finger is actually swollen, but not painful.

CASE 2. The subject of this case was a woman 23 years of age, who after two of her pregnancies had such violent epistaxis as to require the nares to be plugged. Her mother and her sisters also suffered from epistaxis, hemoptysis, and copious bleedings; but the most remarkable thing of this case is, that this woman's second child died three days after birth from hemorrhage from the cord and gums, preceded by inflammation of the umbilical vessels, bladder, scrotum, left testicle, and ecchymosis of the left fore-arm.

It has been said by some authors, that the hemorrhagic diathesis occurs only in males, but the above two cases prove an exception to this rule. The first may, perhaps, more properly be considered as a case of vicarious menstruation.—*Gazette Méd. de Paris*, Feb. 12, 1842.

SPANISH TREATMENT OF PERTUSSIS.

The "*Boletin de Medecina*" of Madrid, after quoting Dr Hannay of Glasgow's plan of treating hooping-cough by the cold affusion, (MONTHLY JOURNAL for 1841, p. 50,) makes the following remarks:—Few are ignorant of the way in which the disease is dealt with in Spain. In the first stage, the treatment consists of local and general blood-letting, according to the indication which the practitioner wishes to fulfil; and in the second, in the employment of revulsives and emetics. Nevertheless, in some cases, hooping-cough resists all these means, in which circumstances we would advise a trial of the following formula, which is highly recommended in the latest French works.

Powder of the root of belladonna,	6 grains.
Powder of liquorice root, .	18 grains.

Mix thoroughly, and divide into 24 doses, one of which is to be administered morning and evening.—*Boletin de Medecina*, 30th Jan. 1842.

SURGERY.

On the Subcutaneous Ligature of Arteries. By F. L. Tavignot.

This is an operation which, as the author admits, has never been performed upon the living human subject; but he has frequently performed it successfully on the lower animals, and has also practised it on the dead body. From his experiments he argues that the operation is not only perfectly practicable, but requires a much shorter period for its performance, than the ordinary operation for the ligature of arteries; that it presents fewer difficulties to the operator, is less painful, does not leave the same unseemly cicatrix, is less tedious in the after treatment, and seems less likely to be followed by secondary hemorrhage. The obvious objection that will be urged against it is the danger of including other textures, besides the artery in the ligature, as pointed out by all surgeons in treating of the ligature of arteries; but the author maintains that the alleged bad consequences are by no means proved to have resulted from this course, and that even if they had, the different circumstances under which the subcutaneous method is practised, make the objection less applicable to it. He also asserts that, where the accompanying nerve and vein are included in the ligature, the innervation and venous circulation of the limb are capable of being re-established by the communicating branches just as the arterial circulation itself is. No doubt, in the subcutaneous method, as in the other, the great interruption to the supply of blood which follows the ligature of a principal artery may give rise to gangrene:—still he believes that there are certain arteries in respect to which this operation will be found to be the preferable one, and where it will be quite unattended with danger.

For the performance of the operation, two sharp needles, each armed with a double ligature of silk or gut, are required. One of these, the one intended to pass under the artery, ought to be larger than the other, as it has necessarily a larger space to traverse. The shorter needle is first to be passed in front of the artery, and withdrawn, leaving the ligature. We then introduce the larger needle at the orifice, by which the former issued, and pass it under the artery, bringing it out at the point of entrance of the first. This needle being also withdrawn, we now have in each orifice the loop of one ligature and the two ends of the other. The ends being placed through the loop, are to be drawn tight, and care taken to ascertain, by the absence of pulsation, that the artery is actually included in the ligatures. Such being the case, permanent constriction is effected, by attaching the ends of each ligature to the branches of an instrument, in a horse-shoe form, which he recommends for that purpose. Thus the operation will be completed in a few seconds. In case of circumstances arising which may render it necessary to loosen the ligatures, it is as well to pass a piece of silk of a different colour through the loop of the superficial one; by pulling upon this we can at pleasure withdraw the ligature and remove the constriction.

Such are the general rules for the operation, in addition to which the author gives many special directions for tying individual arteries, which it is unnecessary here to particularize.—*Examinateur Médicale.*

Permanent Closure of the Jaws, Cured after the lapse of Five Years, by Division of the Masseter Muscle. By William Fergusson, F.R.S.E., Professor of Surgery in King's College, and Surgeon to King's College Hospital, London.

Thomas Leonard, aged 35, a stout, active, and healthy-looking man, applied to me early in June 1841, in consequence of a swelling on his left cheek,

and inability to open his mouth wider than a quarter of an inch between the incisor teeth of the upper and lower jaw. I ascertained that, about five years ago, a swelling had appeared in the situation of the attachment of the masseter muscle to the lower jaw, which gradually acquired the size of a pigeon's egg;—in about two years it burst, and continued to discharge matter for the next six weeks. There were several small openings in the skin, which soon afterwards closed; but a swelling still remained about the bulk of half a walnut (its present size), and ever since he has been unable to open his mouth beyond the extent described. He is unable to masticate, and feels annoyed that he cannot enjoy his food in the usual manner.

On a careful examination of the swelling, I imagined it to be merely the remains of an abscess, which had probably formed in the substance of the lower end of the muscle; that there was no adventitious or separate tumour; and that there was no disease in the bone. The masseter muscle, though it had long been out of use, seemed of its usual development, and felt hard, as if in a state of temporary action. The other parts of the cheek seemed healthy, and the mucous membrane within was in a natural condition. The masseter of the opposite side felt somewhat flaccid, but otherwise in a healthy state.

As he had already undergone a variety of treatment, I was not inclined to hope much from a further persistence in medicinal remedies; I, however, recommended the use of iodine constitutionally and locally, and desired him to return occasionally. After several additional examinations, I could not perceive any change for the better, and I now entertained the idea of dividing transversely either a portion of the masseter or its whole breadth. I supposed that my wisest plan would be to try the effect of a partial division first, and I accordingly, with a very narrow blade, cut through about half an inch of the anterior margin of this muscle. The point of the knife was passed from the mouth through the mucous membrane and buccinator muscle, a little below the parotid duct, and having been pushed between the skin and the masseter, the fibres of the muscle were divided by carrying the edge from without inwards. Only a drop or two of blood followed the withdrawal of the knife; the divided fibres separated freely, and a very perceptible effect on the width of the mouth followed. After the lapse of fourteen days, being convinced that the benefit of this partial division of the muscle was likely to be permanent, I now resolved to cut through its entire breadth, and accordingly I did so by a proceeding nearly similar to that already described,—the chief difference being that of pushing the point of the knife near to the posterior margin of the ramus of the jaw, so as to enable me to make a complete division of the muscle. The knife was blunt towards the heel, such as I use in dividing tendons and muscles in other parts of the body, so that the wound in the lining membrane of the mouth was not larger than the aperture made in pushing the blade onwards to the part to be divided. Having cut every fibre until the edge of the blade came in contact with the bone, I withdrew the instrument, when about an ounce of blood flowed from the wound in the mouth, and a considerable swelling occurred over the divided part of the muscle. The blood continued to trickle from the little orifice for some time, and always came more freely when the swelling was compressed. At last it seemed to cease, and the patient left the house, after having shown me that he could open his mouth to a greater extent than at any time (as he said) during the last five years. I did not continue the movements of the jaw much at this time, as I observed that, whenever I did so, the swelling in the cheek increased, whilst there was greater difficulty and increased pain in subsequent attempts to open the mouth.

When I next saw him he informed me that, on his way home, the swelling in the situation of the wound increased to a very considerable extent, and the tension was so great that he could not move the jaw without considerable pain, when suddenly a stream of blood issued from the orifice in the mouth, and the tumour in the cheek rapidly diminished. Eight days after the ope-

ration, there was still some swelling from effused blood; in eight more it had nearly disappeared, and the movements of the jaw could be made with less restraint and pain than formerly. More than a month after he had ceased in his attendance, he called upon me to show that he could open his mouth nearly as freely, and that he could now masticate his food as efficiently as he had ever done in his lifetime; all remains of effused blood had been absorbed, the original swelling at the lower part of the masseter was much as when I first examined it, and though he seemed delighted with the great improvement which had been effected, there was still, as it appeared to me, such a degree of rigidity, that he could not gape to such an extent as, doubtless, he could have done in his earlier days. I recommended him to move the jaw freely and frequently, and, having since heard nothing more of the case, presume that the improvement has been permanent.

At the present time, when each day may be said to bring forth its new list of muscles, tendons, and other textures, which have been divided by the modern, so called, sub-cutaneous operations, it is not easy to say which muscle has or has not been cut across, during the zealous attempts now going forward in all parts of Europe to remedy, by the combined influence of a small knife and machinery, the numerous deformities and distortions to which the human frame is liable; and therefore with reference to the case above detailed, I will only say that I am not aware of the masseter muscle having been divided under similar circumstances; for examples of permanent contraction of this muscle, independent of any tetanic affection, are not often met with in practice. In my own experience I have met with several instances of permanent inability to open the mouth to such an extent as to permit the patient to masticate; but I cannot say that my attention was particularly attracted by the apparent rigidity of any single muscle, and whether the remedy, which was of such service in this case, may prove equally so in others, I will not venture to assert, but I feel assured that in many instances the division of one or more muscles, either by sub-cutaneous or sub-mucous incision, would be productive of more decided benefit, than the rude and even painful method of forcibly separating the jaws by a dilator, which I have seen practised by others, and have resorted to myself. Now-a-days, when we have proof that most of the tendons and muscles surrounding a joint may be cut across with impunity, the proposal of dividing one or both masseter muscles, in such cases as that which has given rise to these observations, may, I think, be entertained with every degree of reason; even the temporal muscle might be separated from the coronoid process, by a proceeding somewhat similar to that above described, or, should it be thought advisable, the internal pterygoid might be similarly treated. Both muscles last named may be incised to any desirable extent, either through the mouth or by a sub-cutaneous wound, but, in operating on the pterygoid, considerable care would be necessary to avoid the inferior maxillary nerve, as well as the internal maxillary artery. I imagine, however, that it would seldom be requisite to interfere with this muscle, but I think it not at all improbable that some of the readers of this Journal may, ere long, meet with opportunities of testing the efficiency of the practice which I have already applied to the masseter.—*Provincial Med. and Surg. Journ.*, Jan. 20, 1842.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

ROYAL SOCIETY OF LONDON.

December 9, 1841.

The reading of minutes of the anniversary meeting occupied the whole of this meeting.

December 16, 1841.

John Joseph Bennett, Esq., was balloted for, and duly elected a Fellow of the Society.

Samuel Elliott Hoskins, M.D., was also balloted for, but was not elected a Fellow of the Society.

1. "Papers from the several Magnetic Observatories established in India, addressed to the Secretary of the Royal Society, by direction of the Honourable East India Company." Communicated by P. M. Roget, M.D., Sec. R.S.

2. "Variations de la déclinaison et intensité horizontale magnétique observées à Milan, pendant 24 heures de suite, le 28 et 27 Novembre 1841." Par Signor Carlini, For. Memb. R.S.

3. "On a Calculating Machine." By the Rev. Henry Moseley, M.A., F.R.S., Professor of Natural Philosophy and Astronomy in King's College.

4. "A paper was also in part read, entitled, "On Fibre." By Martin Barry, M.D., F.R.SS. L. & E.

January 6, 1842.

Lieut. Thomas John Newbold was balloted for, and duly elected a Fellow of the Society.

The reading of a paper entitled, "On Fibre," by Martin Barry, M.D., F.R.SS. L. & E., was resumed and concluded.

The author observes, that in the mature blood-corpuscle, there is often seen a flat filament, already formed within the corpuscle. In mammalia, including man, this filament is frequently annular; sometimes the ring is divided at a certain part, and sometimes one extremity overlaps the other. This is still more the case in birds, amphibia, and fishes, in which the filament is of such length as to constitute a coil. This filament is formed of the discs contained within the blood-corpuscle. In mammals, the discs entering into its formation are so few as to form a single ring; and hence the biconcave form of the corpuscle in this class, and the frequent annular form of the filament it produces. In the other vertebrata, the discs contained within the blood-corpuscle are too numerous for a single ring; and they consequently form a coil. At the outer part of this coil, the filament, already stated to be flat, often presents its edge; whence there arises a greater thickness of the corpuscle, and an appearance of being cut off abruptly at this part; while in the centre there is generally found the unappropriated portion of a nucleus; and hence the central eminence, surrounded by a depression, in those corpuscles which, from the above-mentioned cause, have the edge thickened. The nucleus of the blood-corpuscle in some instances resembles a ball of twine, being actually composed, at its outer part, of a coiled filament. In such of the invertebrata as the author has examined, the blood-corpuscle is likewise seen passing into a coil.

The filament, thus formed within the blood-corpuscle, has a remarkable structure; for it is not only flat, but deeply grooved on both surfaces, and consequently thinner in the middle than at the edges, which are rounded; so that the filament, when seen edgewise, appears at first sight to consist of segments. The line separating the apparent segments from one another is, however, not directly transverse, but oblique.

Portions of the clot in blood sometimes consist of filaments having a structure identical with that of the filament formed within the blood-corpuscle. The ring formed in the blood-corpuscle of man, and the coil formed in that of birds and reptiles, have been seen by the author unwinding themselves into the straight and often parallel filaments of the clot; changes which may be also seen occurring in blood placed under the microscope before its coagulation; and similar coils may be perceived scattered over the field of view, the coils here also appearing to be altered blood-corpuscles, in the act of unwinding themselves; filaments, having the same structure as the foregoing, are to be met with apparently in every tissue of the body. The author enumerates a great variety of organs in which he has observed the same kind of filaments.

Among vegetable structures, he subjected to microscopic examination the root, stem, leaf-stalk, and leaf, besides the several parts of the flower; and in no instance of phanerogamous plants, where a fibrous tissue exists, did he fail to find filaments of the same kind. On subsequently examining portions indiscriminately taken from ferns, mosses, fungi, lichens, and several of the marine algæ, he met with an equally general distribution of the same kind of filaments. The flat filament seen by the author in all these structures, of both animals and plants, he states to be that usually denominated a *fibre*. Its appearance is precisely such as that of the filament formed within the corpuscle of the blood. It is known, he remarks, that discoid corpuscles circulate in plants; and it remains to be seen whether or not filaments are formed also in these.

By gradually tracing the fibre or filament above mentioned into similar objects of larger size, the author endeavours to show that it is not possible to draw a line of separation between the minutest filament, and an object being to all appearance composed of two spirals running in opposite directions, and interlacing at certain regular intervals; an arrangement which produces in the entire object a flattened form, and gives it a grooved appearance. It is, in fact, the structure which, for want of a better term, he has called a *flat filament*. The edge of this filament presents what, at first sight, seem like segments, but which, in reality, are the consecutive curves of a spiral thread. A transverse section of such an object is rudely represented by the figure 8. This is also precisely the appearance presented by the minutest filament, generally termed *fibre;* and the author particularly refers to the oblique direction of the line separating the apparent segments in the smaller filament, in connection with the oblique direction of the spaces between the curves of the spiral threads in the larger one.

The spiral form, which has heretofore seemed wanting, or nearly so, in animal tissues, is then shown to be as general in animals as in plants. Nervous tissue, muscle, minute blood-vessels, and the crystalline lens, afford instances in proof of this. And if the author's view of identity in structure between the larger and the smaller filaments be correct, it follows that spirals are much more general in plants themselves than has been hitherto supposed; spirals would thus appear, in fact, to be as universal as a fibrous structure.

The tendency to the spiral form manifests itself very early. Of this the most important instance is afforded by the corpuscle of the blood, as above described. The author has also obtained an interesting proof of it in cartilage from the ear of a rabbit, where the nucleus, lying loose in its cell, resembled a ball of twine, being composed at its outer part of a coiled filament, which it was giving off to weave the cell-wall;—this cell-wall being no other than the last-formed portion of what is termed the intercellular substance—the essential part of cartilage. These nuclei in cartilage, as well as those in other tissues, there is ground for believing to be descended, by fissiparous generation, from the nuclei of blood-corpuscles.

The author then describes the mode of origin of the flat filament or fibre, its reproduction, in various animal and vegetable tissues, which he enumerates. He conceives that each filament is a compound body, which enlarges, and, from analogy, may contain the elements of future structures, formed by division and subdivision, to which no limits can be assigned.

[Dr Barry requests us to add the following, in connexion with his Memoir on Fibre, an abstract of which is given above.

The "white substance of the nervous fibre," surrounding Remak's "band-like axis," consists of filaments having the remarkable structure above described, and often curiously interlaced with one another, as though each of them had a spiral direction. In examining the substance of the optic, the olfactory, and auditory nerves, as well as that of the brain and spinal cord, Dr Barry employed for the most part such as had been preserved in spirit; and, besides using extremely minute portions, he very often avoided adding any covering whatever—the weight of thin mica itself being sufficient to rupture or to flatten this delicate substance, and thus entirely prevent its structure from being seen. In the parts last mentioned, he finds red discs, which pass first into rings, and then into spirals. In fasciculi from the spiral cord, and surrounded by spiral filaments, he met with a "band-like axis," which perhaps corresponds to that of Remak in the nerves; but if so, Dr Barry's observations go farther even than Remak's. The "axis" described by this observer was found by him to be susceptible of division into filaments. So also is the one described by Dr Barry. But the latter adds, that each filament is a compound object, which enlarges, and, from analogy, may contain the elements of future structures, formed by division and subdivision, to which no limits can be assigned. The spermatozoa, mentioned in the abstract, were from the epididymis of a person who had died suddenly. The depression noticed in their discoid extremity—corresponding apparently to the "sugient orifice" of some authors—is probably analogous to the source of new substance in other discs. In these examinations, Dr Barry has generally added to the objects dilute spirit (sp. gr. about 0·940), containing about $\frac{1}{500}$th of corrosive sublimate. Spirals from the leaf-stalk of the strawberry, after the addition of this reagent, were seen to have divided into parallel filaments having the same structure as those above described. Flax presented a quadruple coil of such filaments. In early states of voluntary muscle also, there were seen double and quadruple coils, evidently produced by the same means—division. Dr Barry compares the appearance of the vegetable "dotted duct," in its several stages, with that of objects found in mould, in the cornea, in the crystalline lens, and in voluntary muscle, all of which are produced by associations of minute spiral threads. The distribution of the remarkable filaments above described is so universal, that they are found in silk, in the incipient feather, in hair, in the feather-like objects from the wing of the butterfly and gnat, and in the spider's web.

Dr Barry informs us that he has had the opportunity of showing to several physiologists the principal appearances described in his memoir on fibre. And Professor Owen permits him to state, that he has exhibited to him spirals in voluntary muscle,—muscular "fibrillæ," having a flat, grooved, and compound form,—the filamentous structure of "white substance in nervous fibre,"—the vegetable spiral becoming double by division,—a coiled filament within red blood-discs,—and the incipient unwinding of the coil in coagulating blood.—*Annals and Mag. of Nat. Hist., March* 1842.]

January 20, 1842.

His Majesty the King of Prussia was balloted for, and duly elected a Fellow of the Society.

John Tricker, Esq., M.D., and Francis Henry Ramsbotham, M.D., were severally balloted for, but not elected into the Society.

1. The reading of a paper, entitled, "Researches in Physical Geology;" Third Series. By William Hopkins, Esq., M.A., F.R.S., was resumed and concluded.

2. "Contributions to Terrestrial Magnetism," No. III. By Lieut.-Colonel Edward Sabine, R.A., F.R.S.

January 27, 1842.

Samuel Peace Pratt, Esq., was balloted for, and duly elected a Fellow of the Society.

1. "Barometrical Observations made at Yarmouth, Norfolk, on the 21st of June and 21st of September, 1841." By Arthur Utting, Esq. Communicated by Captain Edward J. Johnson, R.N., F.R.S.

2. "On the Anatomy and Physiology of the Decidua." By Robert Lee, M.D., F.R.S.

In this paper, the author describes some appearances which he has observed in the structure of the human decidua, and which apparently prove that the circulation of the maternal blood in the ovum is carried on during the early months of gestation, chiefly by the different layers of this membrane, and the cells of the chorion. He has been led by his observations to the belief, that the veins of the uterine decidua convey blood from the decidual cavity into the veins of the uterus; and that, in all probability, a current of maternal blood is constantly flowing from the cells of the chorion, through the decidua reflexa, into the decidual cavity.

February 1, 1842.

At a Special Meeting of the Royal Society, held at nine o'clock, A.M.,

SIR JOHN WILLIAM LUBBOCK, Bart., V.P. and Treas., in the Chair.

His Majesty the King of Prussia came to the Society, accompanied by Baron Alexander von Humboldt; whereupon the Vice-President in the chair addressed him in the following words:—

"May it please your Majesty,

"It is my duty to express to your Majesty the great regret which we feel, and which we are confident that the Marquis of Northampton, the President of this Society, will participate in, that, being in a distant country, he is unable to be present upon this auspicious occasion, so interesting to the members, and which will long be gratefully remembered in the history of the Society.

"In his absence, therefore, I must endeavour, however imperfectly, to express to your Majesty, the great gratification with which the Society will see the august name of your Majesty, who is venerated as the encourager of art, of literature, and of science, enrolled in our charter-book in the same page with those of our most gracious and beloved Sovereign and her illustrious Consort; and we beg leave accordingly to present the charter-book to your Majesty for that purpose."

His Majesty then signed his name in the charter-book, and was duly admitted a Fellow of the Society.

His Majesty expressed his gratification at having his name enrolled among the Fellows of the Royal Society.

Baron Alexander von Humboldt, formerly elected a Foreign Member, also signed his name in the charter-book, and was duly admitted a Fellow.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

February 2. Dr MACLAGAN, President, in the Chair.

1. Dr Henderson detailed and exhibited several preparations of cases of aneurism of the aorta. His remarks applied chiefly to the diagnosis by auscultation of the seat of the aneurism, and the size of the opening by which it communicates with the artery, and the concomitant condition of the valves of the heart.

2. Mr Goodsir communicated some observations on the morbid anatomy of the intestinal glands, as occurring in continued fever. He stated it to consist chiefly in the development within the vesicles of the Peyerian patches, of a matter presenting the appearance of nucleated cells with clear coats. This product, accumulating in quantity, destroys the walls of the vesicles, and extends itself between the mucous and submucous tissue, forming patches more or less elevated. The distension of the mucous membrane causes it to form a slough, which separates, and consists partly of the mucous membrane, but chiefly of the mass of cellular matter beneath. This paper is published at length in the present Number.

3. Dr John Smith related a case of hysterical mania, occurring in a girl fourteen and a half years old. It commenced with an attack of influenza, accompanied by headache, and delirium which assumed a maniacal character. She complained of fixed pain over the right parietal protuberance. She had hysterical convulsions, and it was discovered that she had lost her hearing. The maniacal condition and deafness continued from January to June, when she complained suddenly of a great noise. The hearing returned immediately, and along with it the reason was restored.

4. Dr M'Kinnon read to the Society the annual medical report of the Royal Lunatic Asylum, Morningside.

5. Dr Hay read a paper on fatal hemorrhage following the extraction of a tooth, and related a case in which this had occurred. Dr Hay's memoir was published at length in the last Number of this Journal.

Dr Handyside referred to a case unconnected with hemorrhagic diathesis, in which he had tied the carotid with success.

Mr Nasmyth stated that in cases of hemorrhage after extraction of teeth, he preferred pressure, and the application of an acidulous solution of nitrate of mercury.

Dr Dunsmure mentioned a case which had occurred to Mr Lizars, in which pressure with sponge tent was effectual.

Dr Finch was admitted an ordinary member of the Society.

March 2. Dr MACLAGAN, President, in the Chair.

1. Dr Allen Thomson exhibited a large series of preparations put up after the manner of Mr Goadby, illustrative of the natural structure of the mucous membrane, and confirmatory of the results of his researches on the structure of the gastric and intestinal glands, as stated in the Transactions of the British Association for 1840.

The author, in describing those preparations, directed his observations principally to the bearing of some points connected with the minute structure of the gastric and intestinal follicles upon the theory of secretion in simple and compound glands, and endeavoured to show in how far the usual or occasional closed condition of various sets of these simpler glands, is compatible with the exercise by them of a secretory function.

2. Dr Handyside read a communication, part first, on connate deficiencies in the encephalon. The following is a tabular view of the arrangement adopted.

Encephalon,	absent,	with deficiency of cranium		*Anencephale.*
	imperfect	with / without / with hydrocephalic expansion	deficiency	of cranium — *Ateloncephale.*
Encephalon or its membranes,	protruding, in part, through a deficiency in cranium			*Encephalocele.* (Hernia Cerebri.)
Encephalon and Spinal Marrow,	simultaneously absent			*Amyeloncephale.*
Encephalon and Cranium,	absent	wholly, or at least very imperfect		*Acephale verum* — with, or without Spina Bifida.
		in part		*Acephale falsum.* — with, or without Spina Bifida.

One case, in a youth of seventeen years, was given, illustrative of the pathology of *Ateloncephale*, in which there existed congenital deficiency of many parts of the converging fibres of the cerebrum, together with slight hydrocephalic expansion of the cranium. It was attended with no impairment of the sensorial functions, but with considerable loss of the mental powers.

Five cases of connate *Encephalocele* were next narrated, to which was added an account of their pathology and diagnosis, with practical details as to the several modes of treatment found most effectual in the treatment of the different varieties of this important class of tumours.

MISCELLANEOUS MEDICAL NEWS.

LETTER FROM DR CARPENTER.

TO THE EDITOR OF THE LONDON AND EDINBURGH MONTHLY JOURNAL OF MEDICAL SCIENCE.

Bristol. March 6, 1842.

SIR,—As the review of my article "Microscope" in the Cyclopædia of Anatomy and Physiology, contained in the last Number of your Journal, imputes to me either incapacity for the due performance of the task undertaken to me, or carelessness in its execution; and as a short explanation from myself will suffice to show that I am not justly chargeable with either, I request your insertion of the following statement.

The article, as sent by me to Dr Todd, included almost every one of the subjects mentioned by the Reviewer as among the desiderata; and the outline of the plan which I had given at the commencement was uniformly filled up in its details. The article did not exceed the limits assigned to it (2½ sheets); and I had no reason to believe that it would be subjected to any material curtailment or alteration. No

proofs were sent to me for revision, nor did Dr Todd communicate with me previously to the publication of the article. My feelings of surprise and disappointment were, therefore, much greater than those experienced by the Reviewer, at finding what I considered the most important part of the article altogether omitted, and many curtailments made in other parts. I wrote immediately to Dr Todd on the subject, pointing out to him how unfortunate it was that my *promise* should remain at the commencement of the article, whilst the performance comes so grievously short of it; and he has replied by requesting me to introduce whatever I may think of sufficient importance in regard to the examination of Tissues, under the article "Nutrition," which I had previously undertaken to contribute.

I may add that Dr Todd's request to me that I should contribute the article "Microscope," dates back more than four years. At that time I was much engaged in microscopic inquiries; but not having subsequently been able to devote as much attention to them as I knew that others had done, I more than once requested Dr Todd's permission to relinquish the engagement. He still, however, pressed it upon me; and I felt bound to fulfil it in the best manner I was able.

As I have been blamed by your Reviewer, as well as by others, for giving a description of my own microscope in preference to that of Mr Powell, I may observe that no figure or description of Mr P.'s microscope had been published at the time the article was written; and that, notwithstanding the authoritative dictum of your Reviewer, I am still convinced, from experience of both (to which *he* cannot lay claim), that, whilst nothing has yet been produced which is superior to Mr P.'s microscope, in its adaptation to the highest class of objects, my own far less expensive instrument is adapted to a much greater variety of purposes, and may be employed for any, with a little dexterity, to as much advantage as Mr P.'s. I am, Sir, your obedient servant,

WILLIAM B. CARPENTER.

[In justice to Dr Carpenter we have inserted the above, which, whilst it exonerates him, at the same time, justifies our criticism.]

LETTER FROM DR MARR.

TO THE EDITOR OF THE LONDON AND EDINBURGH JOURNAL OF MEDICAL SCIENCE.

25, Dundas Street, Edinburgh, March 3, 1842.

SIR,—In my paper on Face Presentations in your Number for February, I referred from memory to an observation made by Mr Ziegler some time ago in the Obstetrical Society. I find that I had misunderstood him, and that his remarks were intended to apply, not to face presentations, but to what are called crown and forehead presentations.

The matter is of very little consequence, and does not in any way affect any argument brought forward by me; but as Mr Ziegler disclaimed this view at the Obstetrical Society, I think it right to give this explanation. I am, &c.

JAMES MARR.

PARISIAN MEDICAL SOCIETY.—This Society, consisting principally of English and American students resident in Paris, continues to prosper. The library is now pretty extensive, and the reading-room in the Rue Racine, and the weekly meetings for discussion, are well attended. The following are the office-bearers for the present session:—PRESIDENT, Baron Paul Dubois; VICE-PRESIDENT, Dr M'Moran; SECRETARY, Mr Parrot.

NURSES OF PARIS.—The Minister of the Interior has ordered a medical inspection of all the offices for nurses in Paris, as a step to the establishment of a permanent medical surveillance over them.

BOOKS RECEIVED.

1. Elements of General Pathology. By the late John Fletcher, M.D. Edited by John James Drysdale, M.D. Edin., and John R. Russell, M.D. Edin. Post 8vo, pp. 519. Edinburgh, Maclachlan, Stewart and Co., 1842.
2. An Essay on the Action and Curative Properties of Strychnia, to which the annual medal of the Harveian Medical Society was awarded in 1832. By James Marr, M.D. Pp. 40. Edinburgh Printing Company.
3. The Hunterian Oration, delivered at the Royal College of Surgeons in London, February 14, 1842. By G. G. Babington, Surgeon to St George's Hospital. 8vo, pp. 32. London, 1842.
4. Practical Essays, by Sir Charles Bell, K.H., M.D. Gott., F.R.SS.L. & E., Professor of Surgery in the University of Edinburgh, and Hospital Consulting Surgeon. Part Second. Royal 8vo, plates. Pp. 164. Edinburgh, lachlan, Stewart, and Co., 1842.

This part contains four Essays, viz. :—1. nerves of respiration, introductory to the of nervous derangement, as distinguishe organic disease. 2 and 3. On the powers c ing the blood. 4. On the formidable dise the spine, as distinguished from distortion. passages in this work are very interesting.

5. Principles of Human Physiology their chief applications to Path Hygiène, and Forensic Medicine pecially designed for the use o dents. By W. B. Carpenter, Lecturer on Physiology in the I Medical School, &c. 8vo, pp. London, John Churchill, 1842.

Dr Carpenter's work is admirably calcul present human physiology to the studen most instructive and attractive form. Th researches of Barry, M. Hall, John Reid man, Gulliver, and others, are given in densed form; and as far as we can perceiv a limited examination of the book which we have only been able to make, it seems to all that is new and important in Physiolog

OBITUARY.

Lately, Dr J. M'Gregor, half-pay, Ordnance Medical Department.

Lately, Dr Chermside, half-pay, 23d foot.

Lately, at Edinburgh, George Mann, Esq., late surgeon 93d Highlanders.

At Hazraporo, on the 18th November last, Maurice Tweedie of the Medical E Calcutta.

At Cedros, Trinidad, on the 3d December last, James Watt, M.D.

At Melbourne, Port-Philip, on the 17th August last, David Henry Wilson, formerly of Glasgow.

At Liverpool, on the 15th February, John Macford, Esq., surgeon.

At Dunse, on the 8th February, James Dawson, Esq., surgeon.

At Manchester, on the 16th February, John Pendlebury, M.D.

At his father's house, Isle of Skye, Edward Gibbons, M.D., jun., late of I pool.

At Plymouth, on the 6th February, of consumption, in his 25th year, Rob Archer, L.R.C.S.I.

Lately, at Cork, Edward Coffey, M.D.

On the 31st January, aged 49, R. Heslop, surgeon.

At Stilton, on the 10th February, aged 66, Henry Olliver, Esq., surgeon, an nent and successful operator.

TO CORRESPONDENTS.

The insertion of several papers must depend on the room which we can for them.

The *Gazette Médicale de Paris* copies articles, we perceive, from other jou without acknowledgment. We discovered this bad practice by finding one o own articles translated in full, and inserted among the "*Travaux Originaux* This is too bad.

THE

LONDON AND EDINBURGH

MONTHLY JOURNAL

OF

Medical Science.

MAY 1.] No. V. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On the Uses of the Liver.* *By* JOHN BOSTOCK, M.D., F.R.S., &c.

I HAVE read with much interest the remarks of Dr Willis on the portal circulation, (contained in the MONTHLY JOURNAL for September 1841,) the more so, as they coincide with some speculations which I have formed on the use of the liver, which I shall now briefly detail. When we take a general view of the animal economy, and especially, when we inquire into the relation which its different functions bear to each other, although we must consider the whole of them as bearing their part in maintaining the system in its perfect state, yet there are some which would appear to be more immediately essential to its existence; among these we regard that series of actions, by which the materials of which the body is composed are received into the stomach, and, after experiencing the necessary change in the appropriate organs, are finally deposited in the blood, constituting the respective functions of digestion, chylification, and absorption. The matter thus deposited in the blood-vessels is destined to supply the demands of the system in the processes of growth and nutrition, as well as for the reparation that may be required,

either from the effect of natural decay, or from accidental injury. Now, in order that there may be, at all times, sufficient materials to supply every contingency, there must, in most cases, be a superfluity, and it therefore becomes necessary that there should be some regular mode of discharging this superfluous matter. The elements which enter into the composition of one aliment, and which, after due elaboration, are deposited in the blood, may be considered as essentially consisting of carbon, azote, hydrogen, and oxygen; and with respect to at least the three first of these elements, a distinct organ is provided for the removal of any superfluous quantity of them which may exist in the blood, after supplying all the wants of the system. The processes by which this removal is effected, and which may be styled *depurative*, are performed for the three elements respectively by the lungs, the kidneys, and the liver.

With respect to the lungs, I may remark that this organ affords a beautiful illustration of that admirable system of adjustment and contrivance, which forms so conspicuous a feature in the animal economy. We conceive the primary and specific object of the respiration to be the evolution of caloric, an effect which is produced by the union of a portion of the oxygen of the inspired air with a portion of the carbon of the venous blood. Now, this combination of oxygen and carbon, by which heat is liberated, constitutes one of the depurative processes; and it is the one which is the most essential to the well-being of the system; for the excess of carbon, which affords the fuel for the "slow combustion" in the lungs, were it to remain in the blood, would render it totally unfit for performing its appropriate functions, or even for the temporary continuance of life.

The second of the depurative processes, that by which the superfluous azote is removed from the blood, is effected by the kidney. The removal of this element proceeds upon a somewhat different principle from that of the carbon. We are not aware of any immediate injury or deleterious effect which the excess of azote produces upon the system, and, therefore, it was not necessary that the whole of the blood should pass through this purifying organ; hence a comparatively small portion only of the blood is carried to the kidney, which secretes or separates from it the highly azotized substance, the urea. With respect to the circumstances which promote the action of the kidney, we may conjecture, that it will be excited by the nature of the fluid that is conveyed to it, and that, when the blood has any of its constituents in undue proportion, it may possess a stimulating quality, adapted to increase the secretion of the urea. And besides the urea, the kidney appears to be one of the great outlets, by which the system is freed from any superabundant water which it may contain, and is thus peculiarly well adapted to carry off all the

urea which is generated, as well as any excess of saline matter which may exist in the blood. The kidney may, indeed, be regarded as a kind of secondary cloaca; the intestinal canal being the channel for carrying off the residual part of the food, after the separation of its nutritive matter, while the kidney discharges the heterogeneous substances which have been received by the blood-vessels, but which, being no longer required, or having performed their appropriate functions, are to be regarded as residual. And with respect to the discharge of water from the system, we have here another example of that plan of compensation, on which we have already had occasion to remark. A quantity of aqueous vapour is exhaled from the lungs, which is increased or diminished according to the temperature of the atmosphere, and various other circumstances, external and internal, but when it is not carried off by the lungs in due quantity, the superfluous fluid is discharged by the kidney.

The third of the depurative processes, that by which the superfluous hydrogen is removed from the blood, is effected by the liver, but by a different arrangement from that employed either in the lungs or the kidney. In the case of the liver, it is only a comparatively small portion of the blood which is conveyed to the organ for the purpose of purification, thus differing from the analogous operation in the lungs, while it also differs from that in the kidney, by receiving venous, instead of arterial blood. Although it may be difficult to assign any reason for this arrangement, which can be considered as more than conjectural, yet we may form some speculations on the subject, which are, I conceive, at least plausible. The blood, after passing through the pulmonic circulation, is sent into the great systemic arteries, purified from its superfluous carbon. The superfluous azote, and the various saline substances are next removed by the kidney, after which the whole of the blood is returned from all parts of the body and conveyed to the great venous trunks. A portion of this blood is carried to the liver, which organ, like the lungs, exercises a double function; the blood is freed from a quantity of superfluous matter, while, by this depurative process, a substance is generated, into the composition of which hydrogen enters in considerable proportion, and which is essential to the proper action of the digestive organs. I agree with Dr Willis in the opinion, that the selection of any particular portion of the venous blood depends entirely upon the anatomical relation of the parts, and not upon any chemical difference in the nature and quantity of its constituents. And we may here remark upon the compensating power of the liver. When, from any cause, a less quantity of carbon is required for the evolution of heat in the lungs, than is consistent with the healthy constitution of the blood, the liver would appear to be the organ by which this irregularity is rectified, by

an increased secretion of bile. We have thus an additional provision made in the arrangements of the system to prevent an undue accumulation of carbon, an element which, when it exists in excess, appears to exert a positively deleterious influence. But with respect to azote and hydrogen, the case is different. Although we must conceive that an excess of these elements is more or less inconsistent with the maintenance of the healthy state of the system, yet it is not so immediately injurious, and we, consequently, have no compensating organs, by which such excess may be removed, in defect of the due operation of the kidney and the liver.

With respect to the oxygen, there appears to be no depurative process by which it is removed from the blood. Probably the continued expenditure of this element, in almost every operation of the system, when either the muscles or the nerves are called into action, may prevent its undue accumulation, and, even should we admit of the existence of a hyperoxygenized state of the blood, we are not aware that any immediate evil would result from it. We may also conjecture, that when the blood contains an excess of oxygen, this redundant quantity becomes united to a portion of carbon, so as to form an oxide, which we may conceive to be less deleterious than the carbon in its uncombined state.

ARTICLE II.—*Case of Hydrencephalocele; with Observations on the Operation of Puncture in that and similar Diseases. By* W. LYON, *one of the Surgeons to the Glasgow Royal Infirmary, and Lecturer on Surgery in the Portland Street Medical School.* (With a Plate.)

(Read before the Glasgow Medical Society, December 1841.*)*

William M'Nicholl, aged eleven days, was admitted June 16, 1841. Situated on each side of the upper part of the nose is a tumour; that on the right side is about the size of a small plum; that on the left of a small almond. The tumours have a glossy appearance, and are spotted, as if dusted with oat meal, and have numerous small vessels ramifying over their surfaces. The tumours have a spongy feel, and can be easily reduced in size by pressure. When the finger is pressed upon them, there is an indistinct feeling as if it entered some vacuity, which is most evident on right side. The palate is entire: and the child is said to have breathed through his nostrils with ease previous to an attack of nasal catarrh, which still continues. Pressure on the carotids, or their branches, does not appear to influence the size of the tumours. The tumours were discovered the day after birth, at which time

Dr Lyon's case of
Hydrencephalocele.

hey were each about the size of a pea, the lesser one, however, aving been then the larger. The general health is good.

June 18. A consultation was held on this case yesterday, at hich various opinions were expressed; but it was eventually greed that one of the tumours should be punctured. The operaion was performed to-day on that of the right side. A puncture as first made with a sewing needle, but not more than a drop of erum could be pressed out; the wound was slightly enlarged by uncturing with the point of a lancet, when about a drachm of impid fluid was discharged slowly, and partly from the effect of ressure. Free escape of the fluid seemed to be prevented, by a hick spongy membrane protruding from the opening. When pres- ure was made over the tumour on the left side, the fluid flowed nore rapidly from the puncture in the other, leading to the con- lusion that there exists a communication between them. When he child cried, the serum was discharged in greater quantity, hich corroborated the suspicion that the cysts were connected ith the brain. A small portion of lint, and over it a strip of laster, were placed upon the wound. The tumours now felt laccid; and the mother of the child remarked, that the fontanelles became less prominent. They had not been abnormally large.

June 19. The lips of the wound have seemingly united; the tumours are as large as formerly.

June 21. The puncture opened of its own accord last night, and serum has since been constantly oozing from it.

Fearful lest the open state of the puncture might lead to inflammation of the cyst, which it was strongly suspected was an extension of, or connected with the cerebral membranes, the wound was closed, with the intention of procuring union of its edges.

June 23. The puncture having closed, and the tumours having regained their former sizes, an opening was made to-day with a cataract needle into that of the left side, in presence of Dr Lawrie and Mr Douglas. The cyst was found thick and spongy; and though the puncture was extended to a small incision, only a trivial quantity of serum was discharged. Next day a crust had formed over the wound; the surfaces of the tumours were inflamed; and the eyelids were œdematous.

June 25. The redness and œdema have decreased; child fretful; does not take suck; tongue, pulse, and skin healthy.

June 26. The patient had a slight convulsive fit early this morning, and died soon after it.

Post-mortem appearances.—The osseous conformation of the vault of the skull was normal. There was effusion of sero-purulent fluid between dura mater and arachnoid, and plastic lymph upon each of those membranes; two ounces of serum in ventricles; the largest quantity in left. The dura mater, and, I think, pia mater, extended into the tumours, through openings situated

below the nasal processes of the frontal bone; the anterior cornua of the lateral ventricles extended into, and probably communicated with the cysts; at any rate, the cerebral substance was distinctly seen in the cysts, and is now visible in the preparation of the parts. I was uncertain as to direct communication between the cysts and lateral ventricles, the length of time the body had been kept previous to inspection, having allowed the brain to become almost pultaceous, and the minuteness of the parts rendering nice distinction difficult. The openings between the dura mater lining the skull, and that portion of it extending into the cysts, were of about the calibre of a crow-quill; the portions of the membranes forming the cysts, were thick, puckered, and spongy, an appearance which is not surprising, when it is recollected that the dura mater, arachnoid, pia mater, and periosteum, entered into their composition.

Description of Abnormal Osseous Condition.—Deficiency of anterior part of roof of ethmoid cells, and also of a small portion of internal angle of orbital plate of frontal bone. No osseous partition between cysts and eyeballs, ossa plana being awanting. Cysts separated from each other at their points of exit, by nasal processes of palate bone and crista-galli internally, and by superior portions of nasal bones externally. Osseous floors, of parts of cysts before exit, formed by ceiling of antra Highmoriana. Openings through which necks of cysts passed, exactly in the line of sutures, at which the nasal bones are joined, with the so-named processes of frontal bone. No extension of cysts into the antra Highmoriana.

Examples of cases somewhat similar to the one I have now described, are to be found in the writings of various authors. So far as I know, the diseased condition is always congenital, and arises from an accumulation of serum, sometimes external to the membranes, oftener in the ventricles, and occasionally both in the ventricles, and upon the surface of the brain. The quantity of serum increasing, a portion of the membranes, and, when the fluid is contained in the ventricles, a portion of the brain also, is protruded at the part of the cranium, where, at the time, the pressure is greatest, and the resistance least, constituting watery rupture of the brain, or hydrencephalocele.

The situation in which it presents is liable to much variety. It is remarked by Otto,[1] that "in by far the most frequent examples it is found in the back of the head, as the brain is protruded through the enlarged occipital hole and the cleft upper cervical vertebræ, or through a hole in the squamous part of the occipital bone, or lastly in the lambdoidal suture; less frequently is the tumour situated on the top of the head, especially at the great

[1] Pathological Anatomy, p. 394.

fontanelle, more rarely on the sides of the skull, or on the forehead, and most rarely of all, it penetrates into the nostrils, the orbits, or the sphenoidal sinuses."[1] By this quotation, it will be observed, that the case which occurred to me, was one of the rarest species of the disease.

The class of cases to which the one I have detailed belongs, is treated with much minuteness by M. Isidore Geoffrey St Hilaire,[2] who constitutes it one of the order proencephales, which he defines,—" Encephale, situè en tres grande partie hors de la boite cerebrale, et en avant du crane, ouvert dans la région frontale." He does not describe any instance, in the least closely resembling the one I have just read, affording another proof of its extreme rarity, and forming one of my strongest reasons for laying it before the profession.

We would have inferred that the order in frequency as to the part of the skull at which the protrusion has been oftenest met with, would have been determined by the circumstance of which point afforded the least resistance; this again we would have supposed to have been much influenced by the period of intra-uterine life, at which the serum began to collect, the resistance of particular parts varying at different periods of development. In any view of the matter, it would have been predicated, that the fontanelles would have been the localities where protrusions of this kind oftenest presented. We see by Otto's statement that this is not the case, of which the only explanation offering itself to my mind, is, that the sinuses of the brain, composed of strong tissue, being farther strengthened by their form and connections, and passing under the fontanelles, may so act as to prevent protrusion. The shape of the ventricles, and the greater thickness of the cerebrum upon their superior and lateral aspects, must have considerable influence in determining the points at which they will first, and most extensively yield, when much distended.

I see it stated by Meckel,[3] " The development of the ethmoid bone does not take place till the fifth month. The lateral portions appear first, and the middle part is not formed till after birth." All that can be inferred from the above fact is, that the dropsy of the brain causing the protrusion in the case presented to me, may not have existed until a late period of intra-uterine life, or at least, that the ethmoid bone is so long of being fully formed, that it would not have offered any resistance to protrusion; much

[1] He mentions a case when the much expanded cerebral appendages of a dropsical brain, covered with dura mater, protruded through the body of the sphenoidal bone into the nose. Lib. cit. 401. Such an instance might give rise to a most dangerous error, by being taken for a polypus.

[2] Histoire Générale et Particulière, des Anomalies de L'Organization, chez L'Homme et Les Animaux.

[3] Anatomie Descriptive, &c. vol. i. p. 144.

reliance, however, cannot be placed upon this circumstance. As the protrusion had not occurred previous to the 5th month, its pressure after that period, could either have prevented the formation, or have produced the absorption of the portion of the ethmoid bone, and of the other bones found awanting. Speculation must be unprofitable, and cannot after all be more than conjectural, as to whether the osseous deficiencies, in the instance I have related, were accidental accompaniments, or were produced by the gradual progression of the distended ventricles, which either prevented the formation, or caused the absorption, of the deficient bones.

It is stated by Sandifort,[1] that the septum of the ethmoid bone and crista galli are sometimes found inclining to one side, in some cases to such an extent that the apertures for the transmission of the olfactory nerves are either wanting or scarcely visible. In one case he saw the opening in the cribriform plate much wider than usual, and the caverns which compose the lateral part of it, shut up by the neighbouring part of the os frontis, superior maxillary, the os unguis, and the os planum. At p. 137 he likewise alludes to a case in which the ossa unguis were wanting, and the usual processes of the superior maxillary bones so deficient as to permit the ossa plana to be seen. He adds, that the bones of the cranium are sometimes perforated with unusual foramina, which are covered by periosteum externally, and dura mater internally.[2] Though the occasional abnormal condition of the ethmoid and neighbouring bones is proved by the above quotations, still we think with Otto, "that certainly in most cases, if not *in all*, such osseous malformations are produced by dropsy of the brain, rather than by a deficient development of the bones of the skull, which is much rather only a consequence of it." A similar opinion is expressed by Meckel.[3]

The extracts from Sandifort show, that though deficiencies do exist in the cranial bones, still the periosteum with which he describes them as being covered, and the dura mater with which they are lined, are sufficient to prevent protrusion of the brain, which, if it occurred, would form true hernia cerebri, which I believe to be a very rare disease.

It is a common opinion, that in chronic hydrocephalus, the serum often exists between the membranes on the surface of the brain; this mistake arises from the feeling of distinct fluctuation which, in these cases, is communicated to one hand, when percussion is made on an opposite part of the head by the other. I am convinced that in ordinary chronic hydrocephalus, as well as in that form of it accompanied with protrusion, as in my case, the serum is almost always contained in the ventricles, which are

[1] Observationes Anatomicæ Pathologicæ, lib. iii. cap. 10, p. 128.
[2] *See* also Otto's Anat. Pathol., p. 394, *et seq.*
[3] Anatomie Descriptive, vol. i. p. 692.

distended so as to expand and attenuate the cerebrum to such a degree, that merely a thin layer of it intervenes between the hand of the examinator and the serum in the ventricles. Upon this point Otto[1] says, that in hydrencephalocele, "the water is, in *rare* cases, contained merely between the membranes, which protruding, forms the hydrencephalocele meningea of Textor and Thompson. More frequently the water is found in one or both ventricles," &c.

The minuteness and advanced decomposition of the parts, made it difficult to determine whether the very attenuated nipple-like processes formed by the prolongation of the anterior cornua of the ventricles, were, or were not open, at their extremities; the probabilities are, I think, against the supposition of their patency, as, had they been open, the serum escaping from the ventricles, would have found its way between the membranes on the surface of the brain, which was not the case; any fluid found there being rather the consequences of the meningitis which resulted from the surgical interference.

That the cerebral substance extended into the cyst, there was not any doubt, and it is still to be seen in the preparation of the parts, hanging from the inside of one of the cysts. Otto[2] describes a case, where an opening from the cysts into the ventricles did exist, very likely produced by the constantly increasing effusion at length lacerating the attenuated cerebral substance, and its lining and covering of pia mater. He says, "both ventricles were very much distended with water, but especially the left, and the posterior lobe of the brain on that side, had, at its outermost extremity, an aperture nearly three lines in diameter, roundish, flat, lined with pia mater, and passing into the cavity of the ventricles."

I shall conclude this part of my subject, by referring to a few cases, which, from the localities where the protrusions showed themselves, and from the symptoms the cases presented, resembled closely the one I met with. For some of these see a paper on the Fœtus, by Dr Montgomery, in the *Cyc. of Anat. and Physiol.*, part xii.; *Dict. de Méd.*, tom. viii., p. 52; *La Lancette Française*, Mars 1835.

The following case has not been published.

The child was brought from Falkirk, to be shown to Dr Lawrie, by whose kindness I was permitted to write to Dr Espie of Falkirk, who had the care of the patient. The latter gentleman most courteously answered my request for information, by a brief but perspicuous statement of the case, from which I extract the following particulars.

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[1] Path. Anat., p. 400. [2] Lib. cit., 406.

"J. M. is now six months old, and was born under the circumstances narrated above, and about the seventh month. Two days after birth, and when so far recovered, a small irregular swelling, the size, while the patient was *asleep*, of a large field bean, was discovered at the site of the right os unguis and nasal bone. The integument was natural in colour. It was enlarged on the infant crying, and then found to be transparent. It was easily reduced, and the osseous defect thereby made apparent. During the first two months of its existence, no pulsation in the tumour was observed; as the child, however, became stronger, the swelling increased, and was seen to pulsate.

"The tumour is now, and has been for some weeks past, half the size of an ordinary Orleans plum. It occupies the space betwixt the eyes, just at the junction of the nasal bones with the frontal, but lower, and to the right side. It is *now* reduced with a *snap*, and when this is done she complains greatly, the osseous aperture is so much contracted. The integument has become much attenuated, rather blue in colour,—the pulsation in tumour is *less* visible.

"In regard to the treatment, I can only state, that I ordered the parents to procure from one of your Glasgow instrument-makers a very light and gentle truss. This was only obtained about two and a half or three months ago: it had the effect of keeping the swelling reduced, with ease to the child. During the use of the instrument, the opening became much contracted.

"I am sorry to say, that the truss cannot now be borne. The child is at present in good health, and is under no treatment, except the frequent use of the acetate of lead lotion to the swelling, to strengthen the integument. You may remark, that had an instrument been applied earlier, it might have afforded farther benefit."—*Dr Espie's Letter, Oct.* 18, 1841.

The extreme rarity of a disease may be pled as a reason either for or against its importance to the practitioner; if from being uncommon, it is the less likely to be met with, on the other hand, when it does exist, there is the risk, from non-recognizance, that an error in diagnosis may be committed; and, therefore, the value which an unusual case loses on the one supposition, is probably equalized by the importance it gains on the other.

A case such as the one I have just narrated, does not often present itself; indeed, so far as I know, there is not one exactly similar on record. All who had an opportunity of observing it, acknowledged the difficulty of explaining the appearance. In several similar instances, mistakes in diagnosis have been committed, leading to very disastrous consequences; while as to the treatment we should pursue in such cases, there exists consi-

derable diversity of opinion. As well for the interest, then, that attaches to every unusual occurrence, as for the practical information the case supplies, I hope I shall stand exonerated for laying it before the Society.

Having all the particulars before them, the members of the Society may not suppose there should have been any difficulty experienced in determining the nature of the disease at the time the child was admitted into the hospital; if such is their conviction, I anticipate being able to undeceive them.

The tumours had a glossy appearance, had numerous small vessels ramifying over their surfaces, could be easily reduced by pressure, quickly resumed their former state when the pressure was removed, were of a deep red colour, possessed distinct pulsation, and were rendered tense when the child cried. The pulsation was very marked at the time of admission, and became less distinct; but at the consultation it was easily perceptible, and was commented on by more than one of the consultants. Such symptoms, which are common to all the species of this disease, taken in connection with the locality of the tumours, at first excited suspicion they were *nævi*, and from their pulsation, of that form of the disease called *aneurism by anastomosis*. It may excite surprise that this error was committed; but when the similarity of the appearances to *nævus* is considered, the frequency of the one, and the extreme rarity of the other, I maintain that the conclusion was not in the least an unreasonable one.

The child was admitted on the 16th, and on the 18th was submitted for the opinions of the members of a consultation.

More than one member of the consultation had expressed his belief that the tumours were nævi, when one gentleman, more acute than his colleagues, took means to place the tumours between his eye and the light, and perceived they were translucent. The original supposition as to the nature of the tumours was now instantly set aside; but still opinions were far from being unanimous, either as to their sources or special characters.

I think one of the gentlemen maintained the tumours were of an encysted character, and sprang from the bones of the face or jaw. One or more surmised the probability of their connection with the antra Highmoriana; and it was hinted that dilatation of the lacrymal sacs would explain the appearances.

Their recession and resiliency when pressure was applied and removed, apart from their colour, pulsation, and increase when the child cried, should have prevented them from being supposed of an encysted kind, and originating from the bones. Had they depended on a collection of fluid in the maxillary sinuses, the nostrils or palate would have been the most likely localities for their appearance; while on that supposition, their pulsation, resiliency, &c. were with difficulty accounted for. Their contents not es-

caping from the *puncta* or nostrils when pressure was applied showed they were not produced by dilatation of the lacrymal sacs

The gentleman who had first observed the translucency of the tumours, declared as his opinion, that they were connected with the brain, and contained fluid, supplied from between the membranes, and that the case closely resembled one of spina bifida, the difference being one more of locality than of any essential particular.

This view had not occurred to me, but was no sooner announced, than I adopted it, convinced that it best explained the obscurity in which the case was veiled. It was not easy to imagine by what route the protrusion had made its way through the bones of the nose and face, and I was not at the time aware of any similar case, by which I could be guided; but the recession and resiliency of the tumours, as pressure was applied or removed, their tension when the child cried, their pulsation, which was now easily accounted for by the motions of the cerebral vessels communicated through the contents of the tumours, and above all, the otherwise unaccountable fact of their being filled with a pellucid fluid, in my opinion, all but rendered certain the conclusion that they were protrusions from within the cranium.

I need hardly advert to the strong evidence afforded by this case, to the value of transmission of light, as a diagnostic in morbid enlargements; its employment here would have prevented the first mistake, the commission of which might have led to very dangerous procedure. I have seen in other instances, still more awkward errors from the very reprehensible neglect of its employment.

It appears that the supposition of the aneurismal character of tumours of this kind, is not the only error that may be committed regarding them. In the second volume of the *Dublin Medical Journal*, there is a paper on this disease by Mr Adam, where reference is made to an instance in which, in 1813, Lallemand mistook a hydrencephalocelic tumour on the occiput, for a wen. He did not perceive his error, until, in proceeding to extirpate it, he exposed the dura mater; in ten days the patient died from the effects of the operation; dissection showed the tumour, containing an elongated portion of the cerebrum, to have passed through an opening of the occipital bone. Mr Adam alludes to a second case, mentioned by Mr Earle, in which the instantaneous death of a patient was caused by the attempt of a surgeon to remove a supposed *encysted* tumour, but which was in reality a hydrencephalocele, as in the instance which occurred to Lallemand.

These details prove the difficulty of making a correct, as well as the danger of arriving at a wrong diagnosis in this rare, and consequently unanticipated and unprepared-for affection.

Upon any of the conjectures respecting the case, I now think

the practice employed was very injudicious; that it caused the death of the patient, who, but for it, had a fair chance of surviving a considerable time, I am sorry to say, there cannot, I fear, be any doubt; while candour obliges me to add, that the gentleman and I, who supported the hydrencephalocelic character of the tumours, were the most culpable of the consultants, the practice of puncture in that morbid condition, being not only not beneficial, but pregnant with highly dangerous consequences.

Before proceeding to prove this assertion, I wish it to be understood, that I consider the affections, chronic hydrocephalus, hydrencephalocele, and spina bifida, as only three varieties of the same morbid condition, the only difference being one of extent, between the two first, and of locality between them and the last one.

The similarity between hydrencephalocele and spina bifida, is still closer, if we allow the correctness of the idea, maintained by many anatomists, that the bones of the cranium are only the more complete development of the rudimentary parts existing in the vertebræ. In any view of this matter, the similarity of the contents of the skull and spinal canal in organization, and partially in their functions, the identity of their membranous coverings, and the sameness of their pathological states in the diseases enumerated, authorise us to consider the treatment applicable to one of them, as equally proper for the others.

The degree of diseased action existing in congenital hydrocephalus, in many of the chronic cases, where there is reason to believe the affection arises posterior to birth, and in spina bifida, appears to be very slight. The disturbance to the health of the patient, does not seem to depend upon the cause producing or keeping up the collection of effused fluid, for the symptoms do not directly indicate the existence of such a cause; but the disturbance to health when it exists, seems rather to result from the effect of distension and pressure, which the excess of secretion exerts upon the brain and spinal marrow; or in other words, the increased action of the exhalents, or the diminished action of the absorbents, on either of which states, or a combination of them, chronic hydrocephalus, or spinal effusion, depend, would not, so far as we know, affect the health of the individual in whom they are present, provided the excess of serum could find escape.

I am not unaware, the opinion is gaining ground, that both forms of hydrocephalus are consequences of a *tuberculated* condition of the cerebral tissue; that this, however, is the general morbid condition, I must either take leave to deny, or be forced to disbelieve the numerous recorded recoveries said to have taken place from the chronic form, which recoveries I cannot think possible, if *tubercles* be always its cause.

There are at least five modes by which chronic hydrocephalus, hydrencephalocele, and spina bifida, have been proposed to be removed.

1*st*, To effect the diminution of exhalation by the influence of medicine and counter-irritation.

2*d*, To promote absorption by appropriate medicines.

3*d*, To discharge the excess of secretion by puncture.

4*th*, To remove the protruding membranes by ligature.

5*th*, To effect the absorption of the fluid by the influence of pressure.

The two first have been found unavailing; ligature is almost certain destruction; and it is to the comparative merits of puncture and pressure, that I desire to direct attention.

Of late years it has been too much the custom to intermeddle in cases of spina bifida; practitioners, led away by one or two successful cases, have not permitted nature to exert her sanative powers. Almost every case has been punctured, forgetting, that in this affection, and also in hydrencephalocele, there are about as many instances of natural as artificial cures, affording strong reasons for not at least following any dangerous treatment, while the diseases remain stationary, and proving the fatal effects of the ordinary practice.

Guyenot, presented to the Academy of Surgery, in 1774, a man 33 years of age, with a hydrencephalocele; his intellect was nevertheless perfect, and his general health good. Examples are recorded, where patients lived to the ages of 8, 17, 20, and 50 years, with spinæ bifidæ.[1] The above author was shown a young woman, 20 years of age, with a large spina bifida. I remarked lately, in a metropolitan journal, an account of the case of an adult, who was presented for the examination of the members of a medical society. In this individual a cure had gradually and spontaneously proceded, until the osseous deficiency in the spine had completely disappeared. It appears from the latter case, and others of a similar kind, as well as several of hydrencephalocele, that not only is the fluid sometimes absorbed, but the openings through which the protrusions have passed, are filled up with osseous matter, and thus a perfect cure is obtained.

The principles upon which the practice of puncture in these diseases has been employed, are altogether incorrect; they remove the effect, but leaving the cause undiminished, the disease soon returns.

Supposing, and I think it nearly incontrovertible, that the pathological condition, existing in uncomplicated ascites or hydrocele, difference of tissue allowed for, is similar to that in the diseases of which we are treating, we cannot anticipate a cure from

[1] Cooper's First Lines, p. 662.

the employment of puncture; for we have it established by experience, that in the two first-named diseases, the practice of puncture is only temporarily beneficial, the fluid quickly reaccumulating, unless, as sometimes happens in even the tunica vaginalis or peritoneum, unirritable as compared to the cerebral membranes, that a slight alterative inflammatory action ensues, which, occurring in the brain or its coverings, would be, and indeed is found to be, eminently hazardous. The objections to puncture in hydrocephalus and its co-genera, hold good, in respect to all diseased states dependent upon excess of effusion; in some of them, however, an occasional withdrawal of the fluid enables us to lessen the extent of the diseased surface, by permitting contraction of the cyst to occur; here the susceptibility of the cerebral membranes to inflammation, and the danger of that action in them, forbid the practice.

I have heard of one case in this city, where puncture was practised for the cure of chronic hydrocephalus. Dr Laurie performed it in the hospital, on another which I sent him from the dispensary; and the one I have described in this paper makes a third. In these three cases, the patients were all previously in good general health, became ill soon after the operation, and they all died within a few days from the time of its having been practised.

In my own practice, and in the practice of others, I have seen seven or eight cases of spina bifida. The children were otherwise well formed; they were all with every precaution subjected to the treatment by puncture, some of them oftener than once. In none of them was any temporary improvement observable; febrile disturbance first, soon after convulsions supervened, and death occurred in all, evidently from the treatment, as until its commencement the patients were in good general health.

My experience in spina bifida particularly, and, with partial exceptions, in hydrocephalus likewise, accords with the accounts of most of the writers on those affections.

So far as I know, the principal advocate for puncture in hydrocephalus, and the author who has oftenest practised it, is Dr Conquest. He states,[1] that he has treated by puncture 19 cases of chronic hydrocephalus, and that upon some of them he had operated two, three, four, and five times, while, "*when last heard of*," 10 of the patients were alive.

This is a result certainly very different from what has happened within my observation, or than any which I have seen adverted to. The acknowledgment by Dr Conquest, that the puncture required to be so often repeated, (in some of the instances five

[1] Lancet, 1837-8, p. 890.

times), shows the frequent inefficacy of the practice, while the large mortality of nine in nineteen, nearly one-half, still proves the great danger of the operation. The paper by Dr Conquest is more an announcement of results than a detail of particulars; he does not state whether, in his opinion, the deaths were attributable to the disease or the operation; he does not give any accounts of the post-mortem examinations; he speaks of the cases given as successful, as being "*all well, when last heard of*,"—a mode of allusion expressive of doubt. The statements, altogether, want precision; but taken at their best, when his results are contrasted with those of the advocates for compression, the propriety of altogether abandoning the use of puncture, is, I think, established.

The cause of the danger following puncture I believe to be the induction of inflammation in the meningeal membranes, or those of the spinal marrow, as the case may be hydrocephalus or spina bifida.

Reasoning from analogy, as afforded by observation of the effects of wounds of the membranes of the brain, in cases of fracture and other injuries, and of operations practised for them, we would not have anticipated the great mortality which ensues from the comparatively small wound of a trocar in hydrocephalus, or sewing needle in spina bifida.

The case I have detailed indubitably died of meningitis; that it arose from the punctures, the previous good health of the patient, and the redness and œdema near the punctures, make almost certain. The deaths in the other cases I alluded to are not easily accounted for, but on the supposition of meningitis. In *The Lancet* for 1839–40, a case of hydrocephalus treated by puncture is detailed, where death occurred from meningeal inflammation. On this point inferences cannot be drawn from the paper by Dr Conquest, the amount, but not the cause of the mortality being given.

In reference to spina bifida, inflammation of the membranes of the cord was demonstrated in several of the cases which I had an opportunity of observing.

Besides inflammation, there is another danger from the practice of puncture. When effusion is contained in the ventricles, and in hydrocephalus it is generally contained in them, and is rarely found on the surface of the brain, and co-exists in the ventricles and spinal sheath in many cases of spina bifida, the cerebrum surrounding the ventricles is expanded and attenuated, and the fluid upon which the expanded and attenuated brain floated being withdrawn, the brain is deprived of the pressure it possessed, is thrown into folds, its blood-vessels dilate, its delicate organization is injured, and a state of collapse occurs, from which some of the patients have with difficulty rallied.

Though a dependent opening be made in a vessel formed of unyielding material, and filled with fluid, it is well known, that from the influence of atmospheric pressure being prevented, the fluid will not be discharged. For a similar reason it has been maintained, that the quantity of blood circulating in the brain cannot be diminished so long as the cranium remains entire. If this is correct, unless the bones are loose in a hydrocephalic case, and the head consequently compressible, the effusion will not flow from a small opening, and the danger will be much increased by making a large one. I am not certain but that the condition above alluded to, prevented the escape of the fluid in the case which forms the subject of this paper.

Though from theoretical deductions, analogical inferences, my own observation, and the large mortality in Dr Conquest's cases, I hope I have been able to substantiate the risk and inefficacy of puncture; yet unless I can prove the safety and success of the substitute I am about to recommend, the practice of puncture will still be defensible, when the destructive influence of this class of diseases on the intellect, on the corporeal functions, and at last its generally certain extinction of life, are recollected.

The influence of pressure in subduing at least subacute and chronic inflammation, and in removing congestion and effusion, are generally acknowledged and acted on, as in hernia humoralis, diseased articulations, œdema, and ascites, where, by diminishing vascular supplies, supporting relaxed vessels, or stimulating inactive absorbents, in the respective examples and other similar states, it is eminently useful.

Dissection has not afforded, in chronic hydrocephalus and its congenera, any direct proofs of inflammation or congestion being their causes; but the presence of the effusion is only explicable on the supposition of the existence of one or other of those morbid states, or of obstructed venous circulation, which is probably included in congestion, or of diminished absorption; and as pressure is in general use as a remedial agent in all those conditions, I will take the liberty of presuming general assent to the ordinary practice and belief, and proceed to state the results of compression in chronic hydrocephalus, in which it has been most frequently employed, though it has likewise been successfully tried in spina bifida.

I regret being unable to supply information as to the effects of compression, from personal observation. I have occasionally recommended its adoption in chronic hydrocephalus, but have very culpably left its application to the parents of the patients, have not sufficiently advised perseverance, and have not watched its ultimate effects.

But in the medical journals published within the last few years, there are numerous cases recorded, and allusions made to

many others, where the practice of compression had more favourable effects. In *The Lancet* for 1839–40, page 82, there are six cases described by Mr T. F. Barnard, authenticated by references to practitioners who witnessed the treatment, which consisted in keeping up constant, equable, gentle compression of the enlarged head, by means of methodically applied strips of plaster. In the Archives Générales,[1] there is a paper extracted from another foreign journal. The paper is written by Dr Charles Engelman of Kreuznach, who also treated six cases by compression, and all with success. In the instances adduced by the latter author, the cures were all completed within a year. Mr Barnard does not, I think, advert to the time required.

Engelman describes the fontanelles and sutures in his patients to have been widely open, the bones of the cranium small, their edges easily depressed, the head greatly enlarged, thrown backwards, and bearing upon the shoulders, the pupils dilated, and the countenance void of all expression. His method was suggested by, and was similar to that used by Barnard. Numerous insulated cases, to be found in recent periodicals, might be cited in support of the practice of Barnard and Engelman; but their assertions having remained uncontradicted, and this paper being already too much extended, I can only solicit attention to the more rational hypothesis on which the practice of compression is founded—the corroborative evidence in its favour by analogous treatment in other similar conditions—at all events, its freedom from danger, which latter point contrasts strongly with the large mortality from puncture, even as given by Conquest, who seems to have been more fortunate than his imitators. It may appear an absurdity to acknowledge pressure as the cause of the danger in hydrocephalus, and to advise an increase of the same agent as a remedial measure. In the first place, the artificial pressure is not applied so strongly as to produce injurious effects; and in the second, its application quickly lessens the effusion; but even though the explanation be denied, the remedial power of pressure in hydrencephalus, hydrencephalocele, and spina bifida, cannot be questioned, as they are authenticated by numerous practitioners of talent and eminence.

All the writers I have consulted, employed strips of plaster, assisted by bandage. These appear to have answered well, but required frequent removal. To obviate that inconvenience, and to keep up a gentle, and at the same time more constant and equable degree of pressure than can be done with strips of plaster, a cap made of some elastic material, and closely fitted to the enlarged head, or a bandage of the same kind as in hydrencephalocele, or spina bifida, may be found to answer.

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[1] Vol. ii. p. 211.

While lately acting in the hospital dispensary, I saw sever cases of chronic hydrocephalus, in which, from the dread of pun ture, and scepticism regarding compression, I did not recommer any treatment. Having by inquiry and reflection become co vinced of the rational principles on which compression is foun ed, and believing the statements given of its success, I much r gret my non-interference, and shall take the earliest opportuni to test its success, and will communicate the results.

No one can have failed to remark the many points of sim larity between the appearances in the case detailed by Dr Espi and my own, and to contrast the different modes of treatmen and consequent results, in the two instances, which strong corroborate the views insisted upon by me.

In Dr Espie's case, the pressure has so much diminished the si of the opening, that reduction of the tumour is now accompanie with the feeling or sound of a "snap," as the Doctor expresses i This feeling or noise can only be accounted for, by supposing produced by the rapid and forcible passage of the contents of tl cyst through the much contracted opening, which, if the pressu be continued, will likely be soon entirely closed by formation bone. There can scarcely be a doubt, that the protrusion only a consequence of hydrocephalus; and therefore unless pre sure is simultaneously applied to the whole head, and the tumo also, only very partial amendment can occur, at least throug artificial measures.

The integuments becoming thinner, while the truss cannot no be borne, are not promising circumstances. Reduction of tl amount of pressure, will, I think, ensure its tolerance, and pr vent farther attenuation of the cyst; while its application to tl entire head, is the only plan to ensure a successful terminatic to the case. Had puncture been employed, I feel assured tl child would not now possess the good health it is described enjoying.

In a communication with which I have been favoured by I Espie since writing the above, he says, "the case here still go on, doubtless to a fatal termination. When I saw it last, it a peared quite well, but the tumour on the increase, and evident consisting at that time of cerebral substance. It is about thr months since I saw it last. It is under no other treatment tha attention to general health. The tumour has of course becon exquisitely tender to the touch."

Pressure having been only partially applied, and having be latterly omitted, we cannot, from Dr Espie's case, deduce ar inferences in respect to the influence of that agent in this disea farther than that while it was continued, the tumour decrease and the opening contracted, leading to the belief that had been moderated and persevered with, it would probably ha

been tolerated, whilst the protrusion, and in all likelihood, the collection of fluid in the ventricles, would have gradually disappeared.

ARTICLE III.—*Case of Tetanus.* *By* A. C. GALL, Esq., M.R.C.S.L., *Ripley, Surrey.*

Miss ——, residing in the island of Serk, had been slightly indisposed for two months, with biliary derangement, and suppression of the menstrual secretion, but had not applied for medical aid.

On the evening of the 29th of December 1841, Miss —— was engaged, in a recently erected school-room, the walls of which were still damp, making arrangements for a fête which was to take place the same evening. In the course of the evening, whilst eating a piece of plum cake, she bit upon a small stone contained in it, and broke the left upper canine tooth, which was much decayed. The pain was at first exceedingly severe. She removed the stump herself, after which the pain ceased, and she retired to rest, not feeling any inconvenience. Upon awaking early the following morning, she found she could not open her mouth, and had a feeling of dull pain, with cramp, in the jaw.

Upon visiting her, I found the jaw firmly closed, and immoveable. The masseter and temporal muscles could be seen acting as if convulsed. The pain was chiefly on the left side, where there was slight swelling and tenderness. Leeches were applied to this part, and afterwards over the affected muscles on each side, a poultice containing Tinct. opii. Vin. colchici aa f℥j.

In the evening the pain was much less, and she was able to open the mouth sufficiently to take a cup of bread sop.

Dec. 31. Was awaked frequently during the night, by a severe pain in the epigastrium, extending to the back, which still continues. The abdominal muscles are contracted during the pain, which, upon subsiding, leaves a sense of craving, which is not relieved by food; the jaw is firmly and completely closed; she is able to take liquids through the intervals of the teeth; there is no difficulty of swallowing; the mouth is dry; pulse 60; bowels not opened since the beginning of the attack; the mind remarkably tranquil, even cheerful. An enema composed of

Magnes. sulph. ℥iss.
Ext. coloc. co. ℥j.

dissolved in a pint of gruel, to be administered immediately. A blister to be applied to the back of the neck.

Evening. The enema operated freely; stools thin, of natural colour; the attacks of spasm not quite so frequent, but undi-

minished in force, and now extending to the back; the body is rather inclined forwards during the attacks. To take

Hydrarg. chlorid. gr. iv.
Pulv. ipecac. comp. gr. xv.

1842. *Jan.* 1. A short time after taking the above powder, vomited a small quantity of bilious matter; slept at intervals during the night; the spasms are not more violent, but have extended to the flexors of the thigh and leg. During the attacks, there is copious and general sweating; pulse 60; the blister has risen well.

R. Tinct. opii. fʒiss.
— lavand. co. fʒj.
Sp. ætheris nit. fʒj.
Syr. simp. fʒvss. Misce.

A sixth part to be taken every four hours.

Diet. Arrowroot with milk, lemonade, and toast water.

Evening. Feels easier; the attacks less frequent. P.

Jan. 2. Had a better night than any since the attack, notwithstanding three severe fits of spasm; bowels not relieved since the 31st ult.; the enema, repeated twice, brought away a small quantity of dark-coloured offensive feces.

Evening. Two drops of croton oil were given this afternoon, and not having acted, three more drops were given, which operated freely, after which she had Tinct. opii. ♏ xxv. The blister to be dressed with Ung. hydrarg. fort.

Jan. 3. Had no sleep; tetanic symptoms much the same. Two doses of calomel were given during the night, which were followed by vomiting of a brownish coloured fluid.

Evening. The thirst is increased; pulse 72, and rather hard.

R. Liq. ammon. acet. fʒij.
Tinct. opii. fʒiss.
Mist. camph. fʒij.

A sixth part every three hours.

Hydrarg. cu. creta. gr. viij. every six hours.

Jan. 4. Slept well last night, having had only one attack of spasm, which did not extend to the legs; there is now no pain along the spine; the teeth can be separated a short distance, and the jaw moves when she is speaking; bowels not opened since yesterday. To continue the mercury, and take a fourth part of the following, every four hours, until it operates.

R. Magnes. sulph. ʒiss.
Mannæ ʒij.
Dec. aloes co. fʒj.
Infus. sennæ co. fʒv.

Evening. Has had only one attack of spasm during the day; bowels have acted once; stools liquid and dark coloured; feels

considerable nausea with eructations; pulse 60. To continue the mercury and anodyne.

Jan. 5. Has had one attack of pain during the night; slept several hours; the abdominal muscles, which have hitherto been rigid, are now relaxed; the gums slightly touched; great nausea, with bitter eructations and thirst; pulse 60.

Acid. citric. ℈i. to be taken every four hours, with a sixth part of the following mixture.

R. Potas. bicarb. ʒij.
Tinct. hyoscyami fʒiss.
Syr. limonis ʒij.
Aq. Oss. Misce.

Evening. Nausea and thirst diminished; feels less stiffness of the jaws; has had no attack of spasm during the day; gums more swollen; slight throbbing headache; pulse 70, full and soft; perspires freely; bowels opened three times; stools fluid; bilious. To discontinue the mercury; the blister, which is still open, to be dressed with Ung. cetacei.

Has had a good night; this morning had an attack of pain in the back, which was followed by pain and cramp in both arms, which lasted three or four minutes, during which she was unable to open the hands; nausea and thirst diminished; is able to protrude a small portion of the tongue; the gums are more swollen; perspires freely; pulse 80. To continue the effervescing medicines.

4 P.M. After awaking from sleep, had an attack of cramp and pain in the arms, which continued for some time, with short intervals of ease; bowels not open. To have a common enema, with Tinct. assafœtidæ fℨij.

10 P.M. The enema returned, with a small quantity of feculent matter; has had no return of pain in the arms; is now free from pain, except in the jaws, which are very painful.

Morph. acet. gr.ss.; to be repeated in three hours if the pain continues. Gargle of Tincture of myrrh and water.

Jan. 7. Has not slept during the night, owing to pain and heat of the gums; had no pain in the body or limbs until this morning, when she was attacked with cramp of the leg; it lasted but a short time, and has not recurred. Feels great soreness of the abdominal muscles which have been affected; bowels not open. To take a dose of cathartic mixture with magnesia. To have chicken broth.

Evening. Bowels open three times; no return of pain; considerable flow of saliva; pulse 75. To take Morph. acet. gr.ss. h. s.

Jan. 8. Has slept well; the gums less painful; the flow of saliva diminished; no return of cramp; bowels free; is able to

protrude a considerable portion of the tongue. To continue the effervescing mixture.

Evening. Feels great pain and tenderness round the margin of the ribs, which is much increased by motion or the sitting posture; some flatulent distension of the abdomen. Acet. morphiæ gr.ss. h.s.s.

Jan. 9. Slept about three hours during the night; the pain in the hypochondria continues; no return of cramp; bowels not open. Mist. cathart.

After this date there was no return of spasm, and, as I have been since informed, (having shortly after left the island), the recovery was slow but steady, and is now complete.

ARTICLE IV.—*Case of Cæsarean Section. By* ALEXANDER ROSS, ESQ., *Surgeon, Invergordon.*

DEAR SIR,—I regret that it is not in my power to give you so full or satisfactory an account of the following case as I could wish, having taken no notes at the time, partly from my patient's place of residence being four miles distant from this, and partly from my having had a good many severe cases to attend, and these scattered at considerable distances. It may not, however, be improper to premise that I was called in, about two months previous to the period to which I shall immediately advert, to see Helen M'Kenzie. She was aged about 35 years, and of diminutive size, was exceedingly troubled with cough and asthma, had general anasarca of the lower extremities, extending up to the abdomen, and was then about seven months advanced in pregnancy. The history I got of her case was, that until about ten years since she had enjoyed good health, that she was then attacked with fever, which continued for several weeks, after which her health was never re-established; that of late she had become much worse, and was therefore induced to apply for advice. Taking all the circumstances of the case into consideration, it appeared to me evident that little relief could then be afforded her; I therefore recommended some simple diuretics and aperients, with the view of palliating symptoms till the time of her confinement. I saw little more of her until sent for, upon Tuesday the 21st December, about eight at night; but before my arrival the pains had completely gone off. I understood that she had at intervals, for several days before, had some pains continuing for hours, and then entirely subsiding. After remaining fully three hours and finding no return of pains, I took my leave, with instructions to send for me as soon as they recurred. I was not again called till the afternoon of Friday the 24th. I found her out of bed, (the cough, asthma, and

dropsy preventing her lying, unless with the head very much raised.) The midwife informed me that she had been now more or less in labour for twelve days; that the membranes had ruptured, and the liquor amnii gradually come away; that the pains had continued all that day, and still more severe and bearing down, but that no progress was made. Upon examination per vaginam, I found the head advancing in the pelvis, but the outlet so defective, that nothing appeared to me practicable but the Cæsarean section. I mentioned this to her brother, who was in the house, and requested farther medical aid might be sent for. To this proposition he immediately acquiesced; but as Dingwall was the nearest station, and even it at a distance of ten miles, and the roads at the time in a bad state, I impressed upon her messenger the necessity of bringing any of the medical gentlemen he could find. He, however, returned without one, all being unfortunately from home. I had therefore to send to Tain, a distance of fifteen miles in an opposite direction, for my friend, Dr Cameron, who arrived about six next morning. I in the mean time returned to Invergordon to procure every thing requisite in the event of an operation being decided on. As the pains continued strong, although at longer intervals, a careful examination of the parts was considered requisite. We found the uterine tumour hard, and projecting toward the left side; per vaginam the head of the child could be distinctly felt, but from the deformed state of the outlet, any thing else could not with accuracy be ascertained, the tuberosities of the ischia approximating so closely, that the remaining apertures might be compared to a slit scarcely an inch in breadth, and about two inches in length, the coccyx closing up the lower part. Pulse quick and weak; the woman appeared exhausted, and expressed herself anxious for relief. After long and mature deliberation, we were decidedly of opinion that nothing but the Cæsarean section would avail. We therefore deemed it advisable to inform her husband and friends of our decision, and added, that from the broken-down state of her constitution, it would not be at all unlikely that she might fall a sacrifice to the operation. They at once acquiesced, upon condition of our obtaining her own consent. This she readily gave upon my proposing it to her. Every thing having been got ready, she was about eight o'clock A.M., placed upon a table with the head raised and supported. An incision six inches long was then made through the abdominal parietes, commencing about three inches above, and extending to three inches below the umbilicus, and a little to its left side, down to the peritoneum. This membrane was then carefully divided, and the uterus exposed. A second incision of the same extent, and in the same direction, was now made, commencing at the fundus uteri, and carried downwards nearly through its whole thickness, until arriving at the lowest

point, when passing the knife through, and guarding it with the forefinger of the right hand, I retraced my steps upwards, laying the uterus completely open. As the breech lay towards the opening, passing the hand, and extracting the infant, was readily performed. The child, a daughter, cried lustily. The funis was then divided, and the child handed away. The placental extremity was laid hold of by the left hand, while the right was introduced in utero to extract the placenta itself, which, being attached to the fundus, was easily removed. The uterus instantly contracted, and Dr C., without losing a moment, bringing, and accurately retaining the edges of the wound in juxta-position, three ligatures were passed, and these again assisted by four strips of adhesive plaster, about an inch broad, and eighteen in length; a pledget of dry old linen, with a broad binder tightly pinned up, being put on above all. She bore the operation remarkably well, and did not lose more than an ounce or two of blood. Having been replaced in bed, some brandy and water, with sixty drops of laudanum, were administered, and strict orders given to keep her quiet. The catheter was not used, nor was it required. I remained till two P.M., and then left, with injunctions to send for me immediately, should any unfavourable symptom occur. I saw her again early next morning, and found she had passed the night wonderfully well. I was informed that there had been a slight degree of hemorrhage from the wound in the evening, which at first alarmed her; but it did not continue. She now said she felt quite easy, and had no complaint save cough and asthma, which was very troublesome. There was no fever, nor in fact any unfavourable symptom whatever during Saturday, Sunday, Monday, nor until Tuesday forenoon, being till then as regular and natural in every respect as if no operation had been performed; and with the exception of a dose of castor oil and some cough mixture, no medicine was required. Upon Tuesday I considered it requisite to remove the binder and adhesive plaster, which was done in as careful a manner as possible, replacing one strip by another before a second was taken off. I found the wound greatly reduced in extent, and that adhesion had commenced, more especially at the upper and lower ends. Gentle pressure was not complained of, but if increased uneasiness in breathing was felt, the abdomen appeared rather tumid, the swelling of extremities having considerably subsided from lying. Fresh plaster and binder being put on, I left, promising to call again on my way home, in two or three hours. Upon returning, I was given to understand that she had most imprudently sat up in bed, expressing a wish to see the child, which she kissed and caressed for some time; that upon lying down, she had a severe fit of coughing, and that in consequence a large quantity of pale yellowish matter had been discharged by the wound. I was obliged to have all the bed-

clothes changed, as they were completely saturated with moisture. The binder was a second time removed, and a fresh one applied. I found the upper and lower strips of plaster had retained their hold, but the two centre ones were partially detached, and there the wound had opened up above and below the ligature, to the extent of a quarter of an inch. As she appeared sunk and weak, I ordered a small quantity of brandy and water to be given, and repeated occasionally, should she require it. I saw her again upon Wednesday morning; the abdominal tumour and swelling of the extremities had nearly disappeared, but as there had been a considerable discharge of serous fluid, which from the heat of the bedclothes had caused a very offensive effluvium, I had her again shifted and bandaged. But it was now evident to all, that nothing could avail: she sank gradually, and expired at 3 P.M. the following evening (Thursday,) thus surviving the operation five days and seven hours, or 127 hours in all.

Were I to offer any remarks upon this case, I should be induced to say that the operation had nothing to do with its fatal termination, and that death was occasioned by chronic congestion of blood in the lungs, consequently asthma and anasarca from debility; unless it may be supposed that the previous predisposition existing in her system to serous infiltration, had so far modified, or altogether prevented active peritoneal inflammation from becoming apparent; certain it is, we did not anticipate her outliving the operation such a length of time. I ought also to state, that the child, which was her first, is doing well. I remain, &c.

ALEXANDER ROSS.

INVERGORDON, *February* 1842.

PART SECOND.

REVIEWS.

A Practical Treatise on Auscultation. By Drs Barth *and* Roger. *Translated from the French, with Notes, by* Patrick Newbigging, M.D. Edin., F.R.C.S.E., &c. 8vo. pp. 398. Edinburgh, 1842.

When we directed the attention of our readers to a part of the contents of this work, immediately after the publication of the French edition in Paris, we expressed our conviction that it forms a better introduction to the study of the diagnosis of thoracic diseases, than any work in the English language.[1] Attaching as we do, a very high value to the objects of investigation embraced in this treatise, and being greatly pleased with the manner in which the authors have accomplished their labours, we are gratified that it has been translated into English, and thereby rendered more generally useful. Dr Newbigging has appended some judicious notes, in which he introduces the opinions of Skoda on the points where they differ from those advanced by MM. Barth and Roger. The sense of the original has been very faithfully rendered by the translator; but the purity of the English idiom has not always been respected.

As the translator points out in his preface, the work before us is not a treatise upon the pathology of the thoracic organs, and is not intended to investigate the sources and nature of the morbid changes which occur within the thorax; these being referred to only as the causes of those acoustic phenomena which serve as their signs. The translator has very judiciously departed from the practice so generally followed in this country, of employing French terms for the different auscultatory sounds, and has substituted English words of corresponding signification in their place. No one can doubt that the term *sounds of friction* is equally elegant, and more generally intelligible in this country, than the French term *bruits de frottement*; and many who would have a clear conception of what was meant by the term *humming-top sound*, might be somewhat puzzled about the import of the term *bruit de diable*. In our former notice of this work, we had occasion only to refer to that part of it which treats of the pul-

[1] Vol. for 1841, p. 273.

monary auscultatory sounds, which forms only about one half of the volume. The other half is occupied chiefly with an account of the auscultation of the organs of circulation, and with obstetric auscultation. Both of these are detailed with much minuteness, combined with great clearness and accuracy, and are not inferior in value to that portion devoted to pulmonary auscultation. We are aware that some are apt to cavil at and depreciate investigations into the physical signs which indicate the normal and morbid conditions of the heart, and inquire, with an air of triumph, what practical advantages have resulted from these. We are glad, however, to find that such remarks are rapidly becoming less frequent; and we would earnestly recommend the few who still indulge in them, to study the subject practically and diligently, and they will plainly perceive the extent of their error. Were it even true that no practical advantages have yet resulted from such researches, any endeavours to arrest their progress, undoubtedly argues narrow and false views of scientific investigation, on the part of those who lend themselves to such attempts. The greater number of facts which are now considered of the highest practical advantage, were isolated and detached, and of no practical application, immediately after their discovery. As the science advances, and additional facts are elicited, their mutual relation manifests itself, and rules of action can now be deduced from them, of which the mere practical man avails himself, though he may still look with indifference, and even pity, upon those pioneers of science, without whose efforts no branch of knowledge can proceed beyond the stage of helpless infancy. The authors of the work before us enter very fully into a consideration of the various explanations of the causes of the normal sounds of the heart, about which so much has been said and written; "as the practice in this case is so intimately interwoven with theory, for the explanation of the pathological phenomena derived from auscultation of the heart will convince us that it is of the utmost importance to arrive at a precise determination of the causes of the sounds." In the historical account of the labours of those who have preceded them, MM. Barth and Roger are certainly not liable to the charge, justly made against many French authors, of being very imperfectly acquainted with the researches of their contemporaries in this country. The investigations of Hope, Williams, the London and Dublin Committees, are fully acknowledged and appreciated. They agree with all the latest and best authorities on this subject, in attributing the second sound of the heart to the *shock of the blood upon the semilunar valves*, during the diastole of the heart. They express more doubt about the cause of the first sound; but they believe that it chiefly depends on three causes,—upon the sound of muscular contraction; upon the

play of the auriculo-ventricular valves, the diseases of which influence the character of the sound; and upon the shock of the heart against the walls of the chest, which, according to the London Committee, reinforces the sound. "Is it not strange," they ask, "that we always feel an anxiety to explain *complicated* facts by *single* causes only? We object to such a method of exclusion, especially when several elements of a complicated problem are equally well supported by positive results of experiment, and by the no less important data of sound induction. This is exactly the case in regard to the sounds of the heart. The moment either sound is produced a certain number of phenomena concur, to each of which we may allot a share in their production, and to several of which experiment proves that a certain share is due." P. 216. Our space will not permit us to enter upon an analysis of the account of the abnormal sounds of the heart given by our authors, though we have marked out many important and interesting observations upon which we would willingly comment; but we shall give a very brief outline of the mode in which the details on one of these abnormal sounds are arranged, as affording some indication of the manner in which this part of the work is executed. We shall select the first in the order of arrangement, and this we find to be the *sound of blowing* (*bruit de soufflet.*) After giving the synonyms of this sound, they proceed to give the details of its *characters*, all the varieties of which "must be known before we can precisely determine the semeiological value of the sound of blowing; for as it may be the interpreter of a great many morbid conditions, it offers of itself very vague indications, so that we can derive no decisive conclusion from the mere fact of its existence. An attentive examination of the differences pointed out will, however, often inform us of the particular disease from which it has its origin." P. 245. Our authors next proceed to the examination of the *physical causes* of this sound. After detailing the various morbid lesions which may produce the blowing sound, they point out that it may present itself under certain conditions of the body, as in anemia, chlorosis, &c., without any organic lesion of the circulatory apparatus. The next point discussed is, the *pathological signification* of the sound, and in this the authors review the kind of disease in which it occurs, and the particular morbid lesions which produce it. In directing the attention of their readers to the various conditions of the system in which this abnormal sound may occur, when there are no structural changes to account for it, they make the following observation, which we would earnestly recommend to the consideration of all those who are engaged in endeavouring to ascertain the average frequency of endocarditis in the course of attacks of acute rheumatism:—

"We are not always able to decide what is the real cause of the sounds

of blowing, so frequently heard in acute rheumatism of the articulations. Far from pretending that they depend on a nervous disturbance of the circulation, or wishing to assimilate them, with some pathologists, to abnormal sounds caused by an alteration of the blood, we merely state that we cannot *always* connect them with endocarditis. We certainly do not deny the connection of articular rheumatism with inflammation of the internal membrane of the heart; but are we justified, the moment we perceive in arthritis a sound of blowing at the precordial region, to pronounce the existence of endocarditis, without ascertaining whether or not it occur along with other sensible or deducible signs of inflammation of the endocardium?"

The details of a case are then given, in which this abnormal sound was heard during an attack of acute rheumatism, and yet no evidences of either endocarditis or pericarditis could be detected after death. Our authors do not mean to deny that the origin of a very great number of the organic diseases of the heart can be traced to attacks of acute rheumatism of the external parts of the body; they only adduce this fact with the view of showing that we ought to be more cautious than the generality of stethoscopists at present are, in associating endocarditis with the presence of the blowing sound, especially if it accompany the first sound of the heart only. This detailed account of the *blowing sound* is closed by an extended examination of its *analytical diagnosis*. In the course of this our authors inculcate upon their readers, that "if blowing coincide only with the first third of the heart's action, it may equally well indicate the presence as the absence of a valvular disease, and, consequently, it can be of no semeiological value. If, on the other hand, the bellows sound correspond with the first two thirds, it announces almost to a certainty an organic alteration of the orifices; and it leaves no doubt about it, if it occupy exclusively the second third, for it is a fact verified by observation, which deserves to be elevated to the rank of a law, *that the sound of blowing of the heart without organic disease, accompanies always the first third, and never the second only.*" P. 254.

"How are we to know at what orifice the sound of blowing is produced, and consequently what are the affected valves. According to the demonstrations given for the first time by one of us, the diagnosis depends on the determination of that point of the precordial region, where the maximum intensity of the abnormal sound occurs. If the maximum exist below the nipple, towards the apex of the heart, we have to establish a disease of the auriculo-ventricular valves; if, on the contrary, above the nipple, at the base of the heart, blowing indicates a disease of the sigmoid valves." P. 257.

After pointing out the application of the stethoscope to the diagnosis of certain diseases of the abdomen, of fractures, &c., our authors proceed to an ample and very satisfactory discussion of obstetric auscultation. The auscultatory sounds attending utero-gestation are arranged under three heads;—*uterine blowing; sounds accompanying the displacement of the fœtus;* and *the pulsations of the fœtal heart.* The term *placental souffle*, is frequently

used to express the phenomena designated by Barth and Roger under the term *uterine blowing*, as they point out in their enumeration of synonyms. After explaining its *characters* and *differential diagnosis*, our authors enter upon a lengthened enumeration of its *physical causes*. Most of our readers are aware that the physical cause of this *uterine blowing* has been very differently accounted for, some maintaining that it depends upon the pressure of the enlarged uterus upon some of the large arteries in its neighbourhood; while others are equally confident that it depends either upon the passage of the blood into the enlarged arteries of the uterus, where the placenta is attached, or into the substance of the placenta itself. Our authors, after a very candid statement of the arguments on both sides of the question, seem inclined to adopt the former view, and evidently lean to the notion of Bouillaud, that it depends upon the pressure of the uterus upon the hypogastric artery and its branches. The translator, in a note, relates some experiments and observations of Professor Simpson, which are strongly in favour of the view, that it depends upon the flow of blood through the enlarged vessels at the placental attachment. The information contained in the section on the sounds of the pulsations of the fœtal heart, is also ample, and very satisfactory; and the value of these phenomena in determining the existence of pregnancy, whether simple or double, whether the fœtus be dead or alive, healthy or diseased, as also its different positions and presentations, is fully discussed. They also point out how it may be rendered available in the detection of extra-uterine conceptions; and the translator, in a note, has given an account of a case that occurred in the practice of Drs Girdwood and Tennent of Falkirk, probably the first and only time in which this mode of diagnosis has been hitherto employed in the detection of extra-uterine pregnancy. The very great importance of the information which may be obtained through obstetric auscultation, as affording indications of the various conditions of the fœtus in utero, is now beginning to be more generally appreciated; and we know of no work where the student will find so accurate and clear an account of the present state of that branch of auscultation as in the work before us. We again earnestly recommend this work to the notice of our readers.

Letter to the Right Honourable George Earl of Aberdeen, K.T., &c. &c., Principal Secretary of State for Foreign Affairs, Chancellor of the University and King's College, Aberdeen, on the State of the Schools of Chemistry in the United Kingdom. By W. GREGORY, M.D., F.R.S.E., M.R.I.A., *Professor of Medicine and Chemistry in the University and King's College, Aberdeen.* London, 1842.

This most interesting and important letter was addressed to the Right Honourable the Earl of Aberdeen, owing to the well-known interest which his Lordship takes in all subjects connected with the useful arts, and also the influence which he at present possesses, owing to the high situation he holds in the Government of the country.

Most cordially do we unite with the author in our hope that our schools of chemistry will no longer remain in their present deplorable condition, and that no time will be lost by his Lordship in calling the earnest attention of the Legislature to this truly important subject.

Our author begins by proving, by a detailed example, the absolute necessity of high scientific acquirements in those individuals who endeavour to improve our manufactures. By tracing the successive improvements in the manufacture of sulphuric acid, he directs our attention to two distinct classes of facts, viz. 1st, That these improvements were the result of strict logical reasoning, founded on the experimenter's knowledge of chemical science, and not to mere fortuitous circumstances; and, 2dly, That the reduction of price in this article, owing to these improvements, affected to a great extent many of the most staple manufactures of the country.

Our author has traced the steps of these improvements as they are brought out in an anonymous article, which lately appeared in the "*Allgemeine Zeitung*;" and the whole is so interesting that we shall briefly run over the various steps.

"The first great stimulus to the improvement of the manufacture of sulphuric acid, was given by the announcement of a prize of 1,000,000 francs (L.40,000), offered by the Emperor Napoleon for the discovery of a simple and cheap process for extracting soda from sea salt. Soda, as is well known, has been used, from time immemorial, for the manufacture of soap and glass, two products of the highest value to mankind. Indeed, the use of soap is so essential to comfort, that the quantity of soap consumed by any people may be viewed as a direct measure of the degree of civilization and happiness they enjoy. Its use depends on the feelings of comfort, nay, on the sense of the beautiful, which are inseparable from cleanliness. Where these feelings prevail, there, we may be sure, civilization and happiness are to be found. The princes, counts, and barons, the rich and powerful in the middle ages, who concealed with costly spices and odours the offensive exhalations of their skin and of their clothes, which rarely came into contact with soap, in-

dulged, it is true, in greater luxury in their sumptuous feasts and splendid dresses than their descendants in modern times. But how vast is the difference between their days and ours, in which personal filth has come to be synonymous with absolute misery!

"It is to glass, again, that the poor man owes the inestimable blessing of the free admission of light to his dwelling, even in the coldest climate. It is not easy to exaggerate the value of these two products, soap and glass, to mankind. During the war, France was deprived of her accustomed supply of barilla (the usual source of soda) and of soap from Spain, the ports of both countries being watched by the British fleet. The high price of soda, soap, and glass, consequent on this state of matters, led to the offer of the prize above mentioned; and the problem was solved by the French chemist Leblanc, who furnished a cheap and simple process for extracting soda from sea salt. France soon supplied herself at a cheaper rate than before; manufactories of soda, soap, and glass, arose and flourished; and the bitter feelings excited among the Spaniards by the permanent loss of a lucrative trade were not without their influence in bringing the Peninsular war to a fortunate conclusion, and in hurling Napoleon from the imperial throne." Pp. 3–5.

The mode in which this discovery affected the manufacture of sulphuric acid is obvious, when we consider that the first step in Leblanc's process is to convert the salt into a sulphate.

Public attention being, therefore, prominently directed to this article of commerce, much ingenuity was employed to render the process more economical; and what with the substitution of nitrate of soda for saltpetre, and the use of platinum retorts, together with various minor alterations, the acid gradually fell in price, until it attained its present exceedingly low cost; and from this single fact all the following results took place: Soda, soap, and glass became much cheaper; a bleaching powder was prepared so economically as to affect materially the price of cotton; printed goods and paper, nitric and muriatic acids, were likewise reduced in cost; and from the extremely low price of the latter, it is now turned to good account in making cheap and superior glue from bones; and, lastly, sulphuric acid is now used with great success for the purifying of silver from copper; in fine,

"But for the wonderfully low price of sulphuric acid, it would have been impossible to produce a number of useful articles not yet mentioned, such as the beautiful stearine candles, phosphorus, phosphorus matches, lucifer matches, and many other products equally remarkable for their superior quality and for their astonishing cheapness. The present prices of sulphuric, nitric, and muriatic acids, of soda, soap, glass, phosphorus, &c. &c., would have been considered, a quarter of a century ago, as fabulous and impossible. Who can foresee what new discoveries, or what improvements on old ones, may arise during the next twenty-five years?" Pp. 11, 12.

After quoting this one example as a basis for his argument, our author proceeds to show the impossibility of learning practical chemistry in the lecture-room, or even in any of the ordinary courses of practical chemistry given in our schools, for the obvious reason, that in none of them can the student carry on research under his own entire management, without which it is im-

possible to become thoroughly acquainted with the science; indeed, we ourselves feel convinced, that however well grounded the student may be in the chemistry acquired from lectures, he will be incapable of carrying on the simplest practical operations with any degree of success, unless his first endeavours are made under the superintendence of a good practical chemist. If left to his own judgment, he will either fail altogether, or will arrive at the result only after a great loss of time and vexation; whereas an experienced counsellor would have led him to the same result with the greatest certainty and expedition. If any number of young chemists, well taught in theory, were all set to the same process, we have little doubt but they would each arrive at the result by a different process; and consequently, as in everything there is one way better and simpler than all others, it follows that at best one only of these chemists can have travelled the nearest road to the desired haven. We may give an example or two in proof of this statement. As organic analysis was, until lately, so very imperfect, as a great many of our most distinguished chemists devoted their attention to the improvement of the process, each detected sources of error in the mode they adopted, which of course required to be guarded against; and thus the process became gradually more and more complex, until many gave up the attempt in despair, and others arrived at valuable results, only at the expense of an infinite amount of trouble. At this period, Liebig appeared, and by a series of the most splendidly devised and accurately conducted experiments, succeeded in rapidly simplifying the mode of analysis to such an extent, that it is now capable of being undertaken by almost any one who possesses an ordinary amount of manual dexterity. Indeed, so great is the value of these improvements, that we owe nearly all the innumerable recent discoveries in organic chemistry to their agency alone. Let us compare the time occupied by various processes in eliciting the same result. Berzelius, by a process of his own propounding, was occupied for 18 months in the analysis of 7 organic acids; and Chevreuil, by another method, was engaged 13 years in his investigation of the fatty substances discovered by him; whereas, "with the assistance of our present methods," says Liebig, "Berzelius would have required at the utmost four weeks, and Chevreuil perhaps two years, for the same researches!" Surely no one can deny the advantage of instructing all those who purpose devoting themselves to chemistry in the best methods at once, without compelling such to toil through all the numerous circuitous routes, which his own brain may chance to suggest in the absence of any practical knowledge of the science he pursues.

Our author next alludes to the reason why schools of research

are not to be found in our universities; and here, as elsewhere, his reasoning is clear, and his conclusions incontrovertible.

"But practical chemistry, or the art of research, is, from its very nature, an expensive study; probably much more expensive than any other branch of education. There are required, first, a convenient and spacious laboratory, expressly fitted up for the purpose; secondly, a complete apparatus; thirdly, a large supply of fuel; fourthly, the substances or materials, without which chemistry cannot be practised; and, lastly, a qualified assistant, capable of taking charge of the laboratory, and of superintending, under the professor, the working pupils; besides preparing the experiments for the lectures, which, for the benefit of beginners, should always be given in a practical school." P. 11.

The expense, therefore, is the grand preventive against the establishment of such a school. In the present state of matters, two methods only could overcome this difficulty,—either the professor must teach for the "love of teaching," and be content to lose a considerable sum of money in every session, or the fees must be so high, that none but the wealthy of the land could indulge in the pursuit; although it is to a very different class of individuals that we have to look to for diligent and indefatigable research, as there is certainly no better incentive to application than the demands of necessity.

Owing to the absence of any such school of research in this country, those who desire to study chemistry are compelled, often at great inconvenience, to go abroad, and those whose means will not admit of this necessary step, are compelled either to resign the study, or content themselves with the mere smattering which they can obtain in the ordinary practical classes at our universities.

Our author then enters into the details of the system adopted by Liebig at Giessen, and points out its most valuable effects. For the details, however, we must refer to the letter itself, which we would strongly recommend to the serious perusal of all interested in the subject; and most earnestly do we hope that the Legislature will no longer remain indifferent to this most important item in the welfare of our country.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

ON THE EXTREME RAMIFICATIONS OF THE MINUTE ARTERIES AND VEINS IN THE COATS OF THE INTESTINES. BY DR GADDI of Modena.

Dr Gaddi of Modena has instituted some researches on the mode of termination of the arteries and origin of the veins in the coats of the intestines, by injecting pure water coloured with cinnabar for the arteries, and indigo for the veins, in children from two to five years of age, unaffected by any intestinal disorder.

The arteries were filled by a general injection from one of the carotids, the current being directed towards the heart; the veins from one of the mesenteric. When the injection was successful, Dr Gaddi has constantly observed, that the trunks of the intestinal arteries were guided by the peritoneal duplicature to the external layer of the muscular coat of the intestinal tube; they turn around this tunic and penetrate it, dividing it into an infinite number of anastomotic arches, more and more delicate, which traverse the second muscular coat to arrive at the sub-mucous cellular tissue. There they all terminate in a thick tuft of almost imperceptible arterioles, not one of which ever penetrates into the mucous membrane, or terminates by a free orifice. The veins, on the contrary, always arise on the free surface of the mucous membrane, by three or at least four veinules, which in most cases have a visible funnel-like orifice, and immediately after penetrating the substance of the membrane, they converge together and unite in the sub-mucous tissue, in a vesicle from which a very fine venous trunk arises, which latter soon associates with the trunk of the artery, passes with it to the muscular layers, where it divides; reunites into trunks of larger and larger size; and, lastly, leaves the intestinal walls, and passes between the folds of the peritoneum.

The tuft of very remote arterial ramusculi just described, envelopes the venous vesicle [" in a sort of atmosphere,"] so that it is there that the artery discharges itself. The vesicle is the point where the arterial takes the character of venous blood, and it is also the point which puts the two systems in communication, as Dr Gaddi was assured in rare cases where the arterial injection penetrated to the venous trunks, to the vesicle, to the branches, and even into the cavity of the intestines. On removing and examining with the greatest care the mucous membrane alone, he has never seen an artery nor venous vesicle, but only the venous radicles in radii. This vascular disposition is constant throughout the whole length of the intestinal tube, from the cardia to the rectum; but it offers some varieties: th s the mucous membrane of the stomach is better provided with venous radicles, especially towards the pylorus, than that of the duodenum; and

they always diminish in number towards the rectum, the quantity being much less in the larger than in the small intestines.

It follows, therefore, that the generally admitted opinion of anatomists, that the arteries and veins communicate by means of an intermediate capillary system, is not correct as regards the intestines; that intestinal absorption is sufficiently explained by the capillary attraction of the venous tubes; that this anatomical disposition accounts for the rapidity with which certain substances penetrate into the circulating system, and which could not take place through the long circle of chyliferous lymphatics; and, lastly, it also explains the occurrence of hæmatemesis and malæna, which are nothing more than venous hemorrhages of the gastro-intestinal mucous membrane. —*Revue Médicale*, June, 1841. (From *Memoriale della Med. Contemp.*) *Dublin Medical Press*, 10th Nov. 1841, p. 295. *Microscopic Journal*, March 1842.

Dr Robert Lee on the Nervous Ganglia of the Uterus.

The general result of Dr Lee's observations and dissections of the nerves of the uterus, a portion of which have been for some time before the public, is best stated in his own words. "In a communication to the Royal Society, read in 1839, I described four great plexuses under the peritoneum of the gravid uterus, which had an extensive connection with the hypogastric and spermatic nerves. From their form, colour, and general distribution, and their resemblance to ganglionic plexuses of nerves, and from their branches actually coalescing with those of the hypogastric and spermatic nerves, I was induced to believe, on first discovering them, that they were nervous ganglionic plexuses, and constituted the special nervous system of the uterus. Subsequent dissections of the unimpregnated uterus, and of the gravid uterus, in the third, fourth, sixth, seventh, and ninth months of pregnancy, have enabled me not only to confirm the accuracy of my former observations, but to discover the important fact, that there are many large ganglia on the uterine nerves, and on those of the vagina and bladder, which enlarge with the coats, nerves, and absorbents of the uterus during pregnancy, and which return after parturition to their original condition." It is the object of the present paper to demonstrate these ganglia, their situation and connections, an adequate idea of which it would be impossible to give without copying the entire paper, and at the same time giving a diagram in illustration of it. We may state, however, generally, that besides smaller ganglia surrounding the vagina, the vessels, &c., Dr Lee describes five principal ganglia, which he names from their situation the right and left hypogastric, or utero-cervical, the middle vesical, the internal vesical, and the external vesical ganglia. They are continuous with the plexuses of the hypogastric nerves, and communicate freely with one another, as well as with the nerves of the rectum and surrounding parts. It was at first believed, on subjecting Dr Lee's preparations to microscopic observation, that what he had described as nerves, were nothing more than bands of elastic tissue, and that he was quite deceived in this matter. Later observations, however, made upon recent preparations, have established the accuracy of Dr Lee's views, and that the filaments described by him as nerves of the uterus, present, under the microscope, precisely the same appearance as those of the stomach and intestines.—*Paper in London Medical Gazette* for Jan. 1841. *Copied from Philosophical Transactions.*

ON OPIUM-SMOKING AMONG THE CHINESE. BY G. H. SMITH, ESQ. Communicated by DR J. JOHNSON, to the Westminster Medical Society, February 12, 1842.

Mode of preparing the opium for smoking—Causes of the prevalence of the habit—Mode of smoking—Description of a smoking-shop—Effects of the opium on the smoker—Influence of the habit on the health, vigour, and conformation of the Chinese—Note by Dr Johnson.

The great extent to which this destructive vice is carried on in this island, and in the straits and islands adjacent, together with the almost utter impossibility of relinquishing the dreadful habit, when once acquired, opens an immense source of revenue to the East India Company, who monopolise the sale of all quantities of opium under a chest, as well as that of arrack, seree, toddy, bang, &c. The annual average revenue of this monopoly, or "revenue farms," as they are called, for ten years past, has amounted to L.4822 sterling. But the quantity of opium smuggled is immense and incalculable. Benares opium is that chiefly used by the farmer for the preparation of "chandoo" (the composition smoked), on account of its weight and cheapness; but the consumers prefer the Patna opium, because it has a finer flavour, is stronger, and its effects more lasting.

The following is part of the mode of preparing the chandoo. Two balls are as much as one man can properly prepare at once. The soft inside part of the opium-ball is scooped out, and the rind is boiled in soft water, and strained through a piece of calico. The liquor is evaporated in a wide vessel, and all impurities carefully skimmed off, as they rise to the surface. The same process is gone through with the soft opium extracted from the ball; and all being mixed and evaporated to the consistence of dough, it is spread out into thin plates, and, when cold, it is cut into a number of long narrow slips. These are again reduced to powder, redissolved, again evaporated, and ultimately rolled up into balls, and a good deal resemble shoemaker's wax. In this state it is fit for smoking, and is at least twice the strength of crude opium. The chandoo, when once smoked, does not entirely lose its powers, but is collected from the head of the pipe, and is then called "tye-chandoo," or fæcal opium, which is made into pills, and swallowed by those whose poverty prevents them from smoking the chandoo itself.

In Penang, the opium-smokers are the Chinese, the Malays, and a very few of other nations, chiefly the native Portuguese. It is calculated that 10 per cent. of the Chinese, 2½ of the Malays, and about 1 per cent. of other natives, are addicted to the vice of opium-smoking. The poorer classes smoke in the shops erected for that purpose, but the wealthier orders smoke privately in their own houses. The practice is almost entirely confined to the male sex, a few abandoned prostitutes of the other sex partaking of the vice. A young beginner will not be able to smoke more than five or six grains of chandoo, while the old practitioners will consume 290 grains daily!!

The causes which lead to this dreadful habit among the Chinese are,—First, their remarkably social and luxurious disposition. In China, every person in easy circumstances has a saloon in his house, elegantly fitted up, to receive his friends, with pipes, chandoo, &c. All are invited to smoke, and many are thus induced to commence the practice from curiosity or politeness, though few of them are ever able to discontinue the vice afterwards.

Parents are in the habit of granting this indulgence to their children, apparently to prevent them from running into other vices still more detestable, and to which the Chinese are more prone than, perhaps, any people on earth. There is another cause which leads great numbers of young men into the practice of opium-smoking, a belief, founded, it is said, on experience, that the said practice heightens and prolongs venereal pleasures. It is, however, admitted by all, that opium-smokers become impotent at a much earlier pe-

riod of life than others. In painful or incurable diseases, in all kinds of mental or corporeal sufferings, in mercantile misfortunes, and in other reverses of fortune, the opium shop is resorted to as an asylum, where, for a time at least, the unfortunate may drown the recollection of his cares and troubles in an indescribably pleasurable feeling of indifference to all around. The Malays are confident that opium-smoking inspires them with preternatural courage and bodily strength; it is, therefore, resorted to whenever any desperate act is in contemplation.

The smoking-shops are the most miserable and wretched places imaginable: they are kept open from six in the morning till ten o'clock at night, each being furnished with from four to eight bedsteads, constructed of bamboo-spars, and covered with dirty mats and rattans. At the head of each there is placed a narrow wooden stool, which serves as a pillow or bolster; and in the centre of each shop there is a small lamp, which, while serving to light the pipes, diffuses a cheerless light through the gloomy abode of vice and misery. On an old table are placed a few cups and a tea-kettle, together with a jug of water, for the use of the smokers. At one side of the door the sub-farmer, or cabaret-keeper, sits, with chandoo, pipes, &c., for the accommodation of his customers. The place is filled with the smoke of the chandoo, and with a variety of other vapours, most intolerable to the olfactories of an European. The pipe, as may be seen, is composed of a shank and a head-piece, the former made of hard and heavy wood, fourteen inches long by three inches and a half in circumference. It is bored through the centre, from the mouth-piece to the head, where there is a kind of cup to collect the "tye-chandoo."

The smokers generally go in pairs, and recline on the bedstead, with head resting on the wooden stool. The mode of proceeding is as follows:—First, one of the pair takes up a piece of chandoo on the point of a short iron needle, and lighting it at the lamp, applies it to the small aperture (resembling the touchhole of a gun), in the head of the pipe. After a few whiffs he hands the pipe to his friend, who lights another piece of chandoo at the lamp; and thus they go on alternately smoking till they have had sufficient, or until they are unable to purchase any more of the intoxicating drug. The fume is always expelled through the nose, and old stagers even draw it into their lungs before it is expired.

During this time, they are at first loquacious, and the conversation highly animated; but, as the opium takes effect, the conversation droops, and they frequently burst out into loud laughter, from the most trifling causes, or without any apparent cause at all, unless it be from the train of thoughts passing through their excited imaginations. The next phase presents a vacancy of countenance, with pallor, and shrinking of the features, so that they resemble people convalescing from a fever. A dead silence precedes a deep sleep, which continues from half an hour to three or four hours. In this state the pulse becomes much slower, softer, and smaller than before the debauch. Such is the general process almost invariably observed among the Chinese; but with the Malays it is often very different. Instead of the placidity that ushers in the profound sleep, the Malays frequently become outrageously violent and quarrelsome, and lives are occasionally lost in these frightful orgies!

The chandoo is sometimes employed for the purpose of self-destruction; but from its strong smell and taste, it is never used as poison for others. It does not appear that sudden death is ever produced by an overdose of chandoo when used in smoking. When an inordinate quantity has been expended in this way, headache, vertigo, and nausea are the effects, and are only relieved by vomiting.

When a person has once contracted the habit of opium-smoking, he finds it extremely difficult to discontinue the vice; yet there are many instances of its being conquered by resolution of mind. In such attempts it is most dangerous to approach the opium-shops, as the smell of the chandoo produces

an irresistible desire to indulge once more in the pernicious habit: neither can opium-smoking be suddenly abandoned without some substitute, as the most serious or even fatal consequences would ensue. The best substitute is tincture of the tye-chandoo (which is about one-fourth of the strength of the chandoo itself), made with "lamsoo," a spirit made from rice, and taken in gradually-diminished doses, till the habit is broken.

By a continuance in this destructive practice, the physical constitution and the moral character of the individual are deteriorated or destroyed, especially among the lower classes, who are impelled to the commission of crimes, in order to obtain the means of indulging in their dominant vice.

The hospitals and poor-houses are chiefly filled with opium-smokers. In one that I had charge of the inmates averaged sixty daily, five-sixths of whom were smokers of chandoo. The baneful effects of this habit on the human constitution are conspicuously displayed by stupor, forgetfulness, general deterioration of all the mental faculties, emaciation, debility, sallow complexion, lividity of lips and eyelids, languor and lack-lustre of eye, appetite either destroyed or depraved, sweetmeats or sugar-cane being the articles that are most relished. In the morning these creatures have a most wretched appearance, evincing no symptoms of being refreshed or invigorated by sleep, however profound. There is a remarkable dryness or burning in the throat, which urges them to repeat the opium-smoking. If the dose be not taken at the usual time, there is great prostration, vertigo, torpor, discharge of water from the eyes, and in some an involuntary discharge of semen, even when wide awake. If the privation be complete, a still more formidable train of phenomena take place. Coldness is felt over the whole body, with aching pains in all parts. Diarrhœa occurs; the most horrid feelings of wretchedness come on; and if the poison be withheld, death terminates the victim's existence.

It is generally remarked, as might, *à priori*, be expected, that the offspring of opium-smokers are weak, stunted, and decrepit. It does not appear, however, that the Chinese, in easy circumstances, and who have the comforts of life about them, are materially affected, in respect to longevity, by the private addiction to this vice, so destructive to those who live in poverty and distress. There are many persons, within the sphere of my own observation, who have attained the age of sixty, seventy, and more, and who are well known as habitual opium-smokers for more than thirty years past. It is a well-known fact, that the present Emperor of China was a slave to the pernicious habit of smoking opium for many years; but that, by great moral courage and perseverence, he weaned himself from the vice, and has ever since become a most violent persecutor of those who are addicted to the indulgence. He accordingly issued edicts of severe punishment against the smoker, vender, importer, and all concerned in the traffic of opium; and, finding these ineffectual, he made the crime capital, and punished it with death. Whatever may be said in favour of the opium traders, and against the policy or justice of the Chinese emperor, I am convinced in my own mind that the real object of his edicts was the good of his subjects, and that he hoped, however vainly, to eradicate a vice destructive alike of the health and morality of those who become its victims. But his Majesty's government acted on very different principles; namely, the most selfish, venal, and mercenary. It is a notorious fact, that many, perhaps most of the officers, employed in preventing the importation and smuggling of opium, are themselves opium-eaters, or opium-smokers, and consequently that they wink at the illicit trade, or take bribes of opium or dollars for the introduction of the drug. It is well known now, that in several of the southern provinces of China, opium is cultivated to a great extent, without any check from the local authorities, and, doubtless, without any knowledge of the emperor himself. The propensity to opium-smoking is becoming so universal and so irresistible in China, that no sumptuary laws, however sanguinary, will be able to stem the torrent. In Penang excessive duties have only increased the thirst for opium; and what

is worse, they have quadrupled the number of murders and other crimes committed in order to obtain the means of procuring the drug ! !

Pulo Penang, Straits of Malacca.

Note by Dr Johnson.

The foregoing paper has been laid before the Society, partly because the subject is curious, and little known in this country, but chiefly for the purpose of offering one or two practical suggestions to the members.

First. I think it will be admitted that the Chinese mode of taking opium, by smoking or inhalation, induces the peculiar sedative effects of that drug more powerfully and more speedily than when taken into the stomach.

Second. There can, I believe, be little doubt, that these effects are produced chiefly, if not entirely, through the medium of the nervous system, and not by digestion, absorption, and the circulation.

Third. It does not appear that the casual or temporary smoking of opium is more dangerous or injurious to the constitution than that of swallowing the drug, whether in substance or solution. On the contrary, I believe it is less so, and not so likely to impair the functions of the stomach, liver, and bowels, as when directly applied to the digestive apparatus.

Fourth. The *habitual abuse* of a drug, by which, in fact, it is converted into a poison, is no argument or reason against its occasional exhibition as a remedial agent.

Fifth. If the above observations be admitted as rational, I see no reason why we should not employ the Chinese mode of inhaling the fumes of opium, in certain dangerous and painful maladies, where the common mode is found to be inefficient, and attended with great derangement of the digestive organs. It is clear that we can very seldom induce that profound sleep and insensibility to all mental misery and corporeal pain by opium taken into the stomach, which we find to be produced by the inhalation of its fumes acting directly on the brain, through the medium of the nerves. Might not the Chinese mode, then, be adopted in tetanus, hydrophobia, tic-douloureux (especially of the facial nerves), violent spasms, and painful diseases that defy the power of opium taken in the common way?

The various preparations of morphia might be easily smoked by means of a common pipe, and the powerful effects induced in a very short space of time, without the possibility of their being rejected by the stomach, or prevented from acting energetically on the sensorium, and throughout the nervous system.—*Lancet*, Feb. 19, 1842.

PRACTICE OF PHYSIC AND PATHOLOGY.

Remarks on the so called "Muscular Amaurosis." By Edward O. Hocken, M.D. &c.

By the term "*muscular amaurosis*," certain cases of simple and compound imperfections of vision, of a peculiar kind, commonly known under the denomination of "weakness of vision" (and palpably dependent on atony of the retina, simple or compound), are classed, and several painful, unnecessary, and therefore injurious, operations are performed, by division, separation, or removal of several of the orbital muscles. As far as I am aware, Mr Adams is the only English surgeon who actually practises these measures. If this gentleman has added anything to our stock of knowledge which bears the test of experience, if he has proved that a class of cases exist, previously unknown, and previously incurable, amenable to operative measures, although severe and dangerous in the performance and consequences, he deserves credit for his discovery, and the thanks of the profession for the practical bene-

fit bestowed on them. Let me, however, now proceed to inquire a little more curiously into the facts of the case.

In the acceptation of a term, we must undoubtedly be guided by the general use and meaning stamped on it by the times in which we live; no one individual has the right to change the signification of the term, in the employment of the term itself; and this, whatever may have been the mere literal meaning, or the acceptation in the olden times, where frequently a wide and ill-defined signification was absolutely necessary, from the want of clear and definite knowledge of science. In the present day, the term amaurosis is restricted to those cases of "imperfection or loss of vision which result either from the diminution or entire suspension of nervous energy, whether functional or organic, sympathetic or symptomatic," although literally it means but "obscurity," and hence the term "muscular" must be inappropriate; for even, for the moment, allowing that these symptoms resulted from some *twisting or bending of the optic nerve*, and that amaurosis was an appropriate term, it would be as correct to speak of steatomatous, osseous, or fibrous amaurosis, when blindness resulted from their growth in the orbit. Again, supposing I were desirous of starting a novelty, I might with as much correctness speak of conjunctival cataract, or of cataractal sclerotitis, insisting that whatever limit the fashion and general assent of the present day chose to give to the term "cataract," it meant derivatively but "disturbance," and was applicable, on this account, to any disturbance of the eye or of vision.

What class of cases, according to Mr Adams, deserve the name, and require the treatment, of "muscular amaurosis?" Not readily defined. If, however, we take the trouble to examine the cases given in illustration, we find that they are those of atony of the retina; "the distinguishing feature of which variety is, that vision is perfect when the eyes are first employed after rest. The patient can see small things as well as large; but sight fails, with watering of the eye, pain in the head and globe, &c., after the patient has exercised vision for some time."[1] It is, in fact, a variety of amaurosis, the characteristic symptoms of which consist peculiarly and entirely in an impairment or loss of vision, without any morbid change in the organic matter of the eye."[2] Now, these cases are by no means of unfrequent occurrence in those who have overworked and overstrained their visual powers, especially where predisposition exists; it slowly increases for years, but is always curable by repose of the organs, and by counter-irritation in the neighbourhood; in fact, we remove the cause of the derangement, and stimulate the *vis medicatrix naturæ*, which steps in and completes the cure. Out of a very great number of cases, I have never seen a failure.

Turn we now to the example I have already given—the wounded integument of the dorsal aspect of the joint. In both instances the constant and habitual disturbance is the cause of the resulting evil, and in both rest is the cure; if, in the former instance, the application of the splint effected the cure, or the splint with antiphlogistic measures (necessary to remove the condition of inflammation already induced), surely it would be unwise to divide the tendon, because some one asserted that its morbid contraction originated the evil, and not the mere motions of the joint, illustrating his propositions by cures. If such were the case, he would, indeed, prove that such examples were curable by his operation (provided no harm resulted from it); but he would not prove that such was the pathology of the affection, nor such the best mode of treatment. So in the form of amaurosis under discussion, if it is *always* curable by rest and counter-irritation (necessary on account of the condition of the retina already affected), it must surely be unwise to cut and mangle many of the orbital muscles and tendons, merely because it suits a theory, and examples of cure are brought forward in illustration, which,

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[1] Vide Author's paper, "Lancet," vol. ii. 1840-41, p. 358. [2] Beer.

even if literally true and correct, prove only that the same affection may be cured by a much more severe and dangerous mode of proceeding, and that some people escape unharmed even when exposed to imminent risk and probable injury, and even come off without deformity and loss of power of motion in the injured parts themselves. On the same grounds, although we should avoid employing a pen-knife to cut a loaf, we should equally shun a hatchet when a table-knife was before us. I will reserve my remarks on pathology until I have said a word on the origin of the theory and operation.

The rage which so generally existed for squint-cutting irresistibly hurried men on to operate on all cases, without discrimination, whatever their cause or pathology might be, whether they were or were not suited for operative measures; and thus, among others, cases where the vision of the squinting eye was imperfect were "cut," to the relief not only of the strabismus, but of the amblyopic condition of vision itself: *post hoc, ergo propter hoc*, the vision was cured by cutting the rectus or recti muscles. This forms a fitting basis whereon to build a novel theory and erect a novel remedy. Thus, then, M. Petrequin, of the Hôtel-Dieu de Lyon, in a communication to the *Académie des Sciences* of Paris, remarks, "The theory of analogies rendered it probable, and strabotomy has demonstrated, that the motor system of the eye exercises considerable influence over its nervous system. From what I have observed in those who squint, I have been led to conclude that certain cases of amaurosis have for their primary cause a spasmodic condition of one or more of the muscles surrounding the globe of the eye. It is now a scientific fact that muscular spasm exists in strabismus; it is not less true that in most cases there is also considerable weakness of vision in the deviating eye. Myotomy, then, may become an heroic remedy against amaurosis depending on contraction of the muscles."[3]

Although my own experience tends to establish that of others, in respect to the improvement of vision occasionally in cases of strabismus after operation, by exercise and restoration to its normal axis, yet I attribute this to obvious causes. In those cases of strabismus where the vision has improved, or has been restored subsequent to the performance of the operation, the organ itself has become defective from the almost complete cessation of its appropriate functions and normal stimulus, and not from any primary amaurotic derangement of the visual nervous system; hence vision has improved gradually under exercise, by the progressive restoration of structure and nervous tone, which had previously failed from a defect in this particular. This explanation agrees with what we observe in other organs; thus, if we subtract the accustomed stimulus from any other organ, or stop or impede the performance of its functions, its power of answering to an impression, or of performing its normal duties, gradually fails, and its structure atrophies; if, under these circumstances, we restore the part habitually to employment, by its ordinary stimulus it gradually regains its functional powers, as well as its integrity of structure. How any one could jump to the conclusion, that the vision of a squinting eye was defective because subjected to muscular spasm, and that it required but relief from this to restore its healthy functions, and that hence there were cases constituting a class, similar in pathology to these forms of squinting amaurosis, although unconnected with the defect itself, and requiring two or three more operations, to make and to cure, and then to remake a squint, by division, separation, and actual removal of a portion of those orbital muscles, the physiology of which is so perfect, harmonious, and beautiful, and so necessary to the good looks and comfort of their proper possessor,—I am at a loss to define. Again, why should the forms of amaurosis, denominated "weakness of vision," have been selected, more than any other, as possessing this pathological causation, and requiring this "heroic" remedy? Because it is the only form in which such measures would not

[3] Gazette Médicale.

have been injurious, where the operations actually oblige the individual to rest his eyes completely, and the effects of the incisions and dissections (if they do not rise to an injurious height) stimulate the retina to put forth healthy efforts, just as I have explained that counter-irritation acts (and is so far necessary) in the same cases, when treated rationally and philosophically.

I will contrast our views of the pathology of the cases under consideration, and will see which bears the greatest probability of truth, although in neither are we able to see the actual seat of disease. Mr Adams supposes that the optic nerves suffer some bending or twisting by the action of the recti muscles. How can he prove this? I believe that the optic never is, or never can be, bent or twisted to any injurious extent by the action of any or all the orbital muscles, for how often should we then become amaurotic during any powerful, strained, or extensive motion imparted to the globe? We can voluntarily throw the four recti into action conjointly, by an effort of the will, by which the globe is retracted, and its antero-posterior axis shortened; thus, in endeavouring to view distant objects, we partially close the lids, and retract the globe, which will be evident on trying the experiment ourselves, regarding others thus occupied, or, above all, in the efforts near-sighted individuals make to see distinctly. When the eyes are fixed on any bodies at rest, and the head or body generally are in motion, the eye-balls undergo rotation to a very considerable extent; but do we thus become amaurotic? No, certainly. Again, I maintain that mere bending or twisting of a nerve is not sufficient to interfere with its functions. Take the elbow, shoulder, knee, and hip-joints as examples; we flex the elbow so as to form a very acute angle indeed with the humerus, but we neither suffer from paralysis of sensation or volition in the parts below. So also in the knee-joint, in the shoulder or hip, the nerves must surely be bent and twisted enough, during their various and extensive motions, to paralyse the nerves if they had a disposition to become so.

Take any part of the body and overstrain its functions, and one of two evils will result; it either inflames, and its functions are deranged or destroyed by that process, or the nervous tone of the part fails; it becomes inadequate to its functions, and atrophy results. This may and will occur, supposing the system be either above or below par; but where it is above, the tone is deranged in the part, and its vessels becoming enlarged, there is a great tendency to congestion. What I myself assert is, that "the tone of the retina may be destroyed or deranged by causes acting gradually or suddenly, quite independent of general debility, in a similar manner as the nervous powers of all other parts of the system may be diminished or destroyed by excessive employment, or powerfully depressing and rapidly enervating agents."[1] The idiopathic varieties have seemed to me to occur under two very different conditions: first, in connection with general debility, excitable nervous system, and cachectic health; the second with general headache and evident cerebral congestion, especially connected with the failure of vision induced by exercise of the eyes. There can be no doubt, I think then, that these symptoms arise from atony of the retina, although some observers have regarded this as doubtful—a condition of the retina similar to that failure of function seen in other parts where the employment exceeds and overpowers the tone; implying a condition of exercise which exceeds that which would have met the exigency, and originated hypertrophy, and obeying a general law, seen throughout the system generally, viz. that where an increased demand is made on the functions of any part, if the part itself and the powers of the constitution at large permit, nature not only compensates for the increased loss by wear and tear, but exceeds this, rendering the part

[1] Vide author's "Sketch of the Pathology of Amaurosis," Medical Gazette, vol. i., 1839-40, p. 942.

more competent for its increased duties; but, on the contrary, if the part or the constitution be unable to compete with the disturbing cause, either from deficiency of tone in themselves, or from the excess of the disturbing cause, then the function and structure are overpowered, and atony is superinduced; according to the severity of the cause, and the local or general deficiency, so the defect is proportioned, and its increase regulated by the same laws.[1]

If it can be proved that there are cases of any form of amaurosis, or even of "obscurity" of vision, not curable by simple measures or on rational principles, and that these can be, and are, cured by the operations proposed for the so-called "muscular amaurosis," then, after the failure of the former, the latter are justifiable; and the individual who proposed the measures and carried them successfully into operation, is justly deserving of commendation; and if Mr Adams, or any one else, can clearly prove that such is the case, I shall be one of the first to acknowledge my obligations, and to avow my previous error.—*Provincial Med. and Surg. Journ.*, 29th Jan. 1842.

On Revaccination. By Dr Domenico Rigoni Stern.

As the subject of revaccination is far from being exhausted, it is proper to collect as much information as possible regarding it. In 1839, Dr S. revaccinated 40 people, almost all of whom were children. The following tables show the success he met with:—

Children vaccinated for the first time ten months ago, 1. Complete effect, 0; no effect, 1.

Children vaccinated for the first time, from one to four years ago, 13. Complete effect, 2; no effect, 2; incomplete effect, 8; not seen again, 1.

Children vaccinated for the first time, from five to eight years ago, 18. Complete effect, 5; no effect, 2; incomplete, 6; not seen again, 1.

Children vaccinated for the first time, from nine to twelve years ago, 6. Complete effect, 0; no effect, 1; incomplete, 5.

Children vaccinated for the first time, from fifteen to twenty-five years, 4. Complete effect, 2; no effect, 0; incomplete effect, 1; not seen again, 1.

These results being few in number, though they cannot settle the important questions relating to revaccination, nevertheless may be of some use when conjoined with others which may afterwards be obtained.

In regard to the remains of the cicatrices, he says:—The number of children in whom the marks of a cicatrix were distinct was 13; in these, complete effect was observed in 6; incomplete, in 6; not seen again, 1. Doubtful, 18;—in these, complete effect, 2; incomplete, 9; no effect, 5; not seen again, 2. Not visible, 7;—complete effect, 1; incomplete, 5; no effect, 1.

This latter table shows that the presence or absence of cicatrices is of no importance.—*Arch. Générales de Méd.*, Dec. 1841. From the *Giornale per servire ai progressi della Patologia e della Terapeutica, fascicolo* xxxv.

On Absorption of Pus in Small Pox. By John Barrett, Esq.

A reperusal of Dr Symond's address of July 1839, recalled to Mr Barrett's remembrance some cases of small-pox, bearing on the subject of the existence of pus globules in the blood. "Those," he remarks, "who have carefully watched cases of small-pox during life, and examined them after death, will, I think, bear me out in saying, that there are circumstances in them, tending to produce a strong conviction that their symptoms are at times dependent on, at least closely connected with, the absorption of the morbific matter from the pustules, and consequently the entrance into, and vitiation

[1] Vide author, Lancet, pp. 358–9, vol. ii., 1840–41.

of the general circulation." Dr Ellictson, in describing variola confluens, says, "that the patients labouring under this form of the disease, die rather suddenly—they suddenly sink." This sudden sinking may take place without any premonitory symptoms, and is most likely owing to the morbific matter of the pustules circulating in the blood. The first case related by Mr B., is a young man, 23 years of age, who took small-pox, and died on the thirteenth day of the eruption. At first it was in some degree confluent, and the pustules were well filled. The fever accompanying it required active medicines. On the tenth day it assumed a typhoid character and delirium, dark furred tongue and great restlessness. The eruption did not scab, but the raised cuticle became loose, as if the contents of the pustules had become partially absorbed. In some places it was rubbed off, leaving large raw patches. *Post-mortem appearances.*—The mucous membrane of the larynx, trachea, bronchi, and small intestines, was of a dark red colour. The pericardium contained three ounces of straw-coloured fluid. The heart was flaccid, the right side was empty, but the left contained black blood. The kidneys were healthy, but inflamed; within the pelvis of the left one, were two drachms of purulent matter, and about three of a similar fluid were found in the bladder. The muscular fibre of the body was very dark.

CASE 2. Was a child six months old. Mr Barrett saw her on the eleventh day of the eruption, about half an hour before her death. He was much struck with the appearance of the eruption; the pustules were flaccid, not dried, but nearly empty of their contents, and looking of a whitish, not yellow colour. This was most the case on the legs. The child seemed dying from exhaustion. The eruption, it appeared, came out thickly; in some places it was confluent, but there was no bad symptom until the morning of the eleventh day. On the tenth some of the pustules had turned, and the parents thought all was going on well. The pustules did not assume the appearance described until the morning of the eleventh. *Post-mortem appearances.*—The pustules were very flaccid and empty. Some effusion of serum beneath the dura mater, and in the ventricles. The bronchi were neither congested nor loaded with mucus. The intestines were generally healthy. On dividing the right kidney, about a drachm of purulent fluid escaped from the pelvis; there was none in the left; neither of them was disorganized nor inflamed. The bladder contained about an ounce of urine, having a purulent appearance, and the peculiar odour attending a patient in small-pox; no pus could be detected in the heart, or any of the large vessels. In this case the flaccid state of the pustules took place about the same date of the disease as in the first case. In the one, typhoid symptoms came on, followed by death in a few days; in the other, extreme exhaustion and rapid sinking. The sudden transition from one state to another, so observable in the diseases of childhood, perhaps the high power of absorption connected with early life, causing in this instance the morbific matter to be rapidly, and consequently more destructively, thrown back on the system, will, I think, explain this difference between the symptoms of the two cases.

CASE 3. Was a child four years old, who was seen on the fifth day, and died on the ninth of the eruption. At first there was moderate fever, with slight chest affection; the pustules were tolerably filled, and but slightly confluent. On the eighth day there was no marked change in the symptoms; soon, however, she got much worse; the pulse became quick and weak; the body cold; there were diarrhœa and dyspnœa, and the pustules assumed a whitish and flaccid appearance. She died on the following morning. No examination was allowed. What was the cause of death in these cases? In none was the disease so severe or confluent as to have warranted apprehension that the patient's strength was unable to bear up against it; when scabbing ought to have taken place the vital powers became exhausted, and the pustules flaccid and empty. The fluid contained in them could not have escaped by the cuticle, as the bodies had not the appearance that the oozing of pus from numerous pustules gives them, and "the existence of pus in two

cases in a healthy kidney and bladder, seems only to be explicable by absorption. Is it not, then, fair to suppose that the circulation, loaded with the contents of the pustules, which absorption had introduced into its current, was incapable of affording that stimulus and support to the different vital functions, without which death sooner or later must supervene? But whether this explanation be allowed or not, one point of practice at least has been strongly impressed on my mind by these cases, viz. the necessity of paying close attention to the appearance of the eruption, (a point I do not think sufficiently insisted on by authors) and of forming a most unfavourable prognosis when such a change as that I have mentioned occurs."—Abridged from *Prov. Med. and Surg. Jour.*, 13th Nov. 1841.

On the Dentition of Children at the Breast. By Professor Trousseau.

Suspecting that the generally received ideas on the dentition of children were not correct, M. Trousseau, from statistical observations not very numerous, has come to conclusions slightly different from the opinions generally believed.

Period at which the first tooth appears. This has been determined in 25 children; 13 boys, and 12 girls. It appeared as follows:

In 2 boys at 3 months.	In 1 girl at 3 months.
— 2 — at 4 —	— 2 — at 3 —
— 2 — at 5 —	— 1 — at 4 —
— 2 — at 6 —	— 1 — at 5 —
— 2 — at 10 —	— 3 — at 6 —
— 2 — at 11 —	— 1 — at 7 —
— 1 — at 14 —	— 2 — at 9 —
	— 1 — at 14 —
Extremes, 3 months, 14 months.	2 months, 14 months.
Average, 7 months.	6 months.

The average time, then, at which the first tooth appears is, from these results, six months and a half; while the general belief at present is, that at eight months it makes its appearance. The common opinion that little girls are more precocious than boys, is also corroborated, as we find a difference of a month between the appearance of the first tooth in boys and in girls.

The first tooth is in general one of the middle inferior incisors. Of twenty-eight children this was the case in twenty-five. In two, a middle superior incisor appeared first; and in a little girl, the first molars preceded all the others.

Period at which the second tooth appears. The twenty-five children in whom a middle inferior incisor first showed, had for their second tooth, the other middle inferior incisor. The common opinion is, that this second tooth appears almost at the same time as the first; and it is quite correct. In twenty-five children, the time that elapsed between the first and second tooth, was, 1 day in 4 children; 2 days in 2 children; 3 days in 1 child; 8 days in 3 children; 15 days in 7 children; 30 days in 1 child; 90 days in 1 child. In six the time could not be determined by the mother.

The middle superior incisors appear next after the two middle inferior. In eighteen children, fifteen had these teeth after the middle inferior incisors. The time that elapses generally between the cutting of the inferior and superior incisors, is more variable than is generally supposed. In thirteen children in whom M. Trousseau was able to verify this, there was a lapse of 8 days in 2 children; 1 month in 3 children; 2 months in 3 children; 3 months in 1 child; 4 months in 1 child; 5 months in 2 children; 10 months in 1 child.

In general, then, there is a considerable interval between the appearance of the second first and the second second teeth. It may be established as a

general rule, almost without any exception, that after the appearance of these four teeth, the two lateral superior incisors next cut the gum, and then the two inferior ones, so that the child has only two teeth in the lower jaw, while it has four in the upper. It is curious, M. Trousseau says, that this fact, so well known to mothers who have brought up several children, should be unknown to those who have written specially on this subject. Whilst a considerable period takes place between the first appearance of the inferior and superior incisors, the four superior incisors follow each other at a short interval. After these six teeth have come through, some time elapses before the next, which are generally believed to be the two lateral inferior incisors, appear. M. Trousseau, however, says, that as a general rule, one or several molars, and sometimes even the canine, are protruded before them. After the cutting of the four molars, and the two inferior lateral incisors, another considerable interval of time elapses, when the four canine successively appear; and then after another period, at the age of from twenty-four to thirty months, rarely sooner, the second set of molars come out.

In the second part of his work, M. Trousseau treats of the diseases incidental to teething, and especially of the diarrhœa accompanying it, and he combats the opinion so prevalent, that nothing ought to be done for it. He shows that it is not only not useful, but decidedly injurious to the little patients—that it weakens them, and lays the foundation of marasmus, which if not checked in time, soon goes on to a fatal termination.—*Gazette Méd. de Paris*, 4th Feb. 1842.

HISTORY OF A CASE IN WHICH A FLUID PERIODICALLY EJECTED FROM THE STOMACH CONTAINED VEGETABLE ORGANISMS OF AN UNDESCRIBED FORM. BY JOHN GOODSIR, Conservator of the Museum of the Royal College of Surgeons in Edinburgh. WITH A CHEMICAL ANALYSIS OF THE FLUID. BY GEORGE WILSON, M.D., Lecturer on Chemistry in Edinburgh.

Mr ——, aged 19, consulted me about a stomach complaint, under which he had been labouring for four months, and which had more or less resisted every attempt made for its removal. He informed me that he considered it to be water brash; that it attacked him on awakening in the morning with a feeling of distension of the stomach; that, without any effort of vomiting, a quantity of fluid, varying in volume from two-thirds to a whole wash-hand basonful, passed up from his stomach; that after this he was quite relieved, and experienced no further inconvenience till the evening of the same day, when, without decided distension, sounds as of a fluid boiling or bubbling, and proceeding from the region of his stomach, were perceptible to himself and to those around him; that he slept well enough, but was generally attacked in the usual manner next morning. Such was my patient's own account of his case.

On examining more particularly into the symptoms, I could ascertain nothing positive. His tongue and pulse were natural; he had no headache, nausea, or thirst; no tumour could be detected in the epigastrium, and no pain on pressure was complained of in the region of the stomach. The bowels were moved daily, and the stools were normal. His appetite was not affected, and the usual articles of diet appeared to agree with him. He was thin, but had a good complexion, and his flesh was firm. He stated that he had formerly been very fat, but that this had left him before the accession of his stomach complaint. I was informed that one of his testicles had never descended beyond the groin.

Of the various remedies which had been tried for his relief, prussic acid appeared upon the whole to have exercised the greatest influence over the disease, preventing the attacks with considerable certainty for several days in succession.

Being unable to make up my mind as to the exact nature of the case, but

conceiving it probable that there might be ulceration or some other organic lesion of the stomach, I ordered croton oil, frictions of the epigastric region, and the internal remedies to be discontinued. I also requested that the ejected fluid might be preserved for my inspection.

Next day I found that he had had an attack in the morning as usual. No new symptoms presented themselves.

On examining the ejected fluid, I was struck with the truth of what had been stated to me, that it smelt like fermenting worts, with a faint acid odour. It appeared, after having stood for a few hours, moderately transparent, and of a light brown colour. It had deposited in the bottom of the basin a quantity of a ropy matter, of a granular appearance; and on the surface was a mass of froth like the head of a pot of porter.

By a consideration of all the circumstances of the case, I was now induced to conceive it possible that this and other cases of similar stomach complaints might depend on fermentation of the contents of the organ. Such a fermentation might, I presumed, be primary, that is, induced by the chemical constitution and relative conditions of the contents of the stomach; or it might be secondary, induced by circumstances in the condition of the organ standing in the relations of primary causes of the whole complaint. But, whatever might be supposed to be the cause of the presumed fermentation, it appeared to me highly probable, that, if it had really taken place, it would be indicated by the remains of ferment-vegetables in the ejected fluid.

In the mean time, till I had examined the fluid more minutely, I merely regulated my patient's diet. Animal food was recommended; vegetables and malt liquors were forbidden, and a little brandy in water was ordered for drink.

I now proceded to examine the fluid ejected from the stomach, and in proceeding to do so, I expected, if I found any vegetable form at all, to see some of the globular or moniliform algæ, which it now appears pretty certain are concomitants of certain of the fermentations. What was my astonishment then to find, in the first drop I examined, not the vegetables I was led to expect, but numerous individuals of a form, with allies of which the zoologist is familiar! Drop after drop exhibited the same specific form, with a precision which convinced me that I had now to deal with an organism which, whether animal or vegetable, was closely allied to certain genera of *Baccillariæ*, and much more closely to the genus *Gonium* among the *Volvocinæ*.

Before I proceed with the history of the case, or with the description of the organism which characterised it, it may be well to state, that, in addition to a few fragments and shreds of undigested food, the ejected fluid presented the following microscopic elements.

1*st*, Fecula cells, globular, ovoidal, and kidney-shaped, with well-marked hila of attachment. Some of these cells were transparent and empty, others were full of starch granules, and reacted powerfully with iodine. These cells were at first presumed, and were afterwards proved by comparison, to be nothing more than the remains of wheaten bread.

2*d*, Much larger, more irregular, flaccid, ruptured, or half-emptied cells, full of granular matter, which reacted with iodine, and were recognised as fecula cells of the potato, as they appear after boiling.

3*d*, Minute shreds of muscular fibre, cellular tissue, and fat cells, remains of the food.

4*th*, Globules or globular masses, from 500 to 100 of an inch in diameter, apparently oily, and presumed, although as to this no inquiries were instituted, to be some form of the chyme.

5*th*, Occasionally, but rarely, portions of bran, consisting of the perisperm of the wheat, recognizable by its internal surface presenting irregular-sized, ovoidal, or hexagonal shallow foveæ, with included fecula cells.

6*th*, The organisms themselves, which I at once recognized as belonging

to the vegetable kingdom, and considered either as the cause of the symptoms in my patient's case, or at least as very remarkable and important concomitants.

I may state that these organisms could not have been swallowed in the water used for drink, as the water employed by the family for that purpose was regularly passed through a stone filter. I used every precaution also in ascertaining that they could not have been introduced along with any article of diet, and in satisfying myself that they were not portions of any animal or vegetable tissue.

I now recommended a return to the use of prussic acid. I ascertained that it exercised a decided influence over the disease. After some time, however, I became satisfied that it acted more by enabling the stomach to retain its contents, than by any other direct influence in preventing the formation of the fluid itself.

The case proceeded about a fortnight without any change in the symptoms, the prussic acid being regularly taken at bedtime, with the effect of putting off the attacks occasionally for a day or two at a time.

I now determined to give creasote, from a belief that it would not only act, as the prussic acid had done, in preventing the ejection of the fluid, but that it would also put a stop to its formation. This I conceived it would do, whether the disease arose from a simple fermentation of the contents of the stomach, or from the development of the organisms as a primary cause.

A drop of creasote was ordered every night at bedtime. Supper was forbidden; a very light dinner of animal food was recommended, and breakfast indicated as the principal meal. Cessation of his somewhat sedentary habits, active country exercise on foot and horseback, and attention to the bowels were insisted upon.

A decided improvement now took place. The attacks, instead of recurring almost every morning, now took place only on the fifth or sixth morning, and latterly at intervals of eight or ten days. The quantity of fluid ejected also diminished in quantity, not exceeding six or eight ounces.

The attacks again increased slightly in frequency, and in quantity of fluid ejected, but this was at once controlled by a gradual increase of the dose to four drops at bedtime. It also appeared advisable to divide the dose, so as to take two drops in the forenoon, and three or four about an hour and a half after dinner, so as to stop the formation of the fluid. This effect my patient felt satisfied the creasote produced, as the bubbling or crackling sensation in the stomach usually ceased after taking his dose.

The bowels were now acted upon rather smartly, so as to promote the action downwards from the stomach.

At the present date I have it not in my power to state that the complaint is removed, although the attacks are much less frequent, and the quantity of fluid diminished. The creasote, however, has a most decided control over it, and will, I am inclined to believe, ultimately cure it. The disease, indeed, may depend on the patient's time of life, and on the peculiarity of his constitution, and may gradually disappear even without medicine, as a consequence of increased corporeal vigour.

The Structure, Mode of Reproduction, and Development of Sarcina ventriculi, the parasite detected in the ejected fluid.—The following description is drawn up from examination of the ejected fluid for a period of nearly two months.

In every instance the organisms presented themselves in the form of square or slightly oblong plates. The thickness of an individual was about one eighth of the length of one of its sides. Under a moderate power the sides and angles appeared straight and well-defined; but under deep glasses, the angles were rounded and the sides sinuous, appearances which resulted from the uncompressed forms of the component cells in their particular directions.

The flat surfaces were divided into four secondary squares by two rectilinear transparent spaces, which, passing from side to side, intersected one another in the centre like two cross garden walks.

Each of the four secondary squares was again divided by similarly arranged but more feebly developed spaces, into the four ternary squares.

The sixteen ternary squares thus constituted, when examined with deeper powers, were seen to consist each of four cells, which were not separated by transparent spaces, but simply by dissepiments formed by the conjunction of the walls of contiguous cells.

These sixty-four cells of which the organism consisted did not present in perfect individuals distinct nuclei; although in certain instances appearances presented themselves, having relation to the reproduction of the organism, and falling to be described in another part of the paper.

The individual organisms were transparent and slightly yellow or brown. When carefully examined under favourable circumstances the cell-walls appeared rigid, and could be perceived passing from one flat surface to the other as dissepiments. These dissepiments, as well as the transparent spaces, were from compression of contiguity rectilinear, and all the angles right angles; but the bounding cells bulged somewhat irregularly on the edges of the organism, by reason of the freedom from pressure.

These circumstances gave the whole organism the appearance of a woolpack, or of a soft bundle bound with cord, crossing it four times at right angles, and at equal distances.

From these very striking peculiarities of form, I propose for it the generic term *Sarcina*.[1]

Perfect individual *Sarcinæ*, of the species now under consideration, vary from 800 to 1000 of an inch linear, along each of their sides. They are, as has been stated, slightly brown or yellow under a high power—under moderate glasses they appear dark, and are defined with difficulty, on account of the frequent reflections of the light by the dissepiments. Iodine does not react with them, as with starch, but tinges them deep brown or yellow. They shrivel but slightly in alcohol. In nitric acid, even after boiling for some time, the sixteen ternary squares retain their relative position, but diminished and shrivelled, appearing like minute crystalline granules arranged in a square. So persistent are those arrangements of granules in boiling nitric acid, that I at one time suspected the existence of silicious loricæ, or isolated raphides, but as I could not detect the same forms or arrangements in the ashes of the evaporated and calcined fluid, I do not now believe in their existence.

This species of *Sarcina*, therefore, consists of sixteen four-celled frustules, imbedded in a square tablet of a transparent texture, as in the *Goniums*. The four-celled frustules correspond to the cells or globules; the tablet to the phycomater or gelatinous matrix of certain of the *Ulvaceæ*.

The generation of *Sarcina* is fissiparous, each individual dividing into four. This is proved by the following circumstances.

1*st*, Specimens are frequently met with, which, instead of 16 ternary squares, and 64 ultimate cells, exhibit 64 ternary squares, and 256 ultimate cells. Such specimens are not, I conceive, to be considered as individuals, inasmuch as, 1. Their four component squares are very loosely connected together; 2. One or two of the squares may be awanting, or two or more of these may remain attached by the angles,—an arrangement never presented in the primary squares themselves.

2*d*, Large specimens are occasionally to be met with, which have most of the characters of composite individuals, that is, of individuals about to divide into four. Such specimens do not present 256, but only 64 ultin ats

[1] *Sarcinula* would have been more appropriate, had not Lamarck already applied the term to a genus of polyps.

cells, and these, exhibiting appearances not easily defined, but apparently consisting of four opaque spots, as if each cell were about to be divided into four parts, or were in the act of producing within itself four new cells.

Such appearances rendered it difficult to say whether certain specimens were simple individuals or composite—single adults, or adults about to divide each into four young ones.

I therefore conclude, that a perfect individual *Sarcina* consists of 64 ultimate cells, but that as soon as each of these again divides into, or produces four new cells, the individual becomes composite, and may forthwith divide into four young ones, each of these again to undergo the same quaternary division.

Such a mode of generation will account for what I frequently observed,—two, three, or four *Sarcinæ* attached by their angles only, as in the bacillarian genera. It also explains why I could never detect more than four so united. It may account for the circumstance that the *Sarcinæ* were found grouped as it were in colonies, in certain portions of the ropy fluid, some drops containing numbers of them, others none at all.

Such is the structure, mode of reproduction, and of development of the species *Sarcina*.

In tracing these out, it cannot but have been observed how beautiful is the symmetry of all the arrangements—how the parts of the individual are arranged in the square—how these parts increase in numbers in a geometrical progression—1, 4, 16, 64, 256,—and lastly, how the species propagates according to the same law, 4 in the first generation, 16 in the second, 64 in the third, 256 in the fourth, 1024 in the fifth, and so on with a rapidity peculiar to such a series of numbers.

Is *Sarcina* an animal or a vegetable? is it one of the infusorial Polygastrica or a minute Alga? In order to give a satisfactory answer to this question, it becomes necessary to analyse the groups to which *Sarcina* is most closely allied.

Putting out of view for the present the *Fragillariæ*, *Diatomaciæ*, and other gonioid organisms, the animal or vegetable nature of which is yet a matter of doubt, I shall proceed to Müller's genus *Gonium*, the genus of all others to which *Sarcina* has the greatest affinity.

The genus *Gonium* consists of composite polygastric animalcules, each corpuscule of the whole animal having, according to Ehrenberg, the organization of a monad, oral appendages, visceral sacs, &c. Ehrenberg does not enumerate eye-points among the characters of the family to which the *Goniums* belong, (*Volvocinæ*). Without coming to any decision as to whether the red points on certain species of *Gonium* be really eye-points, or merely optical illusions,[1] I may state at once, that I am inclined to believe, that the genus *Gonium*, as at present constituted, contains both animal and vegetable species—the former characterized by oral appendages, voluntary motions, (eye-points?) the latter by their simple cellulo-globular formation. *Gonium Pectorale*, (*Pectoralina Hebraica*, B. St Vincent,) *Gonium Punctatum*, contrary to the opinion of Bory St Vincent and others, appear to be true composite animals.

But Ehrenberg has here, as in many other instances, decided for the animal nature of organisms in which even his experienced eye could not detect the characters of the family.

Such is the case with *Gonium Hyalinum*, *Gonium Glaucum*, and probably with *Gonium Tranquillum*.

These three species appear to consist merely of cells full of chlorophylle imbedded in the square plate which corresponds to the outer envelope of the *Nostochinæ*.

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[1] It may be well to state, that the red dots do not appear in all the species, and it is interesting to observe, that those species in which they have not been detected, are the very species in which oral appendages apparently do not exist.

To such forms belongs *Sarcina*. It exhibits no mouths, no oral appendages, no visceral sacs, and its cells, instead of having the gelatinous appearance so familiar to the observer of the animal infusorials, are clear, transparent as if empty, and have that consistency of wall characteristic of vegetable structure.

Believing *Sarcina* to be a vegetable, I may state, in reference to its characters, that they are of a kind which distinguish it from all the gonioid plants at present known. It differs most essentially from *Pectoralina Hebraica* of Bory St Vincent, which as we have already stated, appears to be a true animal. It makes the nearest approach to *Gonium Hyalinum*, which, with *Gonium Glaucum* and *Gonium Tranquillum*, even Ehrenberg himself seems inclined to hand over to the botanists under the generic term *Gonidium*.

The generic characters of *Sarcina* are to be found in the predominance of the constituent cells over the outer coat or lorica, in each frustule being four-celled, and in the entire freedom of these from all coloured contents. Of the specific characters of a single species much cannot be said.

I define the genus thus:

Sarcina. Plants coriaceous, transparent, consisting of sixteen or sixty-four four-celled square frustules, arranged parallel to one another in a square transparent matrix.

Species 1. *Sarcina Ventriculi, mihi*. Frustules 16; colour light brown; transparent matrix very perceptible between the frustules, less so around the edges; size 800 to 1000 of an inch. Hab. the human stomach.

As soon as I had detected the *Sarcina*, I called upon my friend Dr George Wilson for an analysis of the fluid. The following is his report.

The liquid sent me for examination was thick and viscid; by standing, it deposited a large quantity of ropy matter mixed with portions of undigested food, and when filtered through paper it had a pale brownish-yellow colour, and was quite transparent. It still contained much animal matter in solution, becoming opaque and flocculent when boiled, and giving a very copious precipitate with infusion of galls. It also precipitated nitrate of silver densely, and when evaporated to dryness, and exposed to a full red heat in a platina crucible, left an ash containing much chloride of sodium. It had a peculiar acid odour, which all who have observed it compare to that of sour beer; it reddened litmus powerfully and effervesced sharply with alkaline carbonates. These remarks and all that follow, apply without exception to portions of liquid ejected at various intervals during a period of four weeks.

To determine the nature of the acid which existed so abundantly in the ejected matter, a pint of the filtered liquid was distilled in a retort, till nine-tenths of the whole had passed over. The fluid in the receiver was colourless but opalescent, and a flocculent matter was diffused through it; it reddened litmus strongly, and gave, with nitrate of silver, a precipitate insoluble in nitric acid, and soluble in ammonia. The latter reaction seemed to point to the acid as the hydrochloric, but as the liquid had not the odour of that acid, and the presence of flocculent matter showed that substances not truly volatile had been passing over with the vapour during distillation, I suspected that the precipitation of the silver-salt had resulted from chloride of sodium transferred from the liquid in the retort by a similar process of mere mechanical convection. To decide this point, a portion of the distilled fluid was evaporated to dryness in a porcelain capsule, and strongly heated; distilled water poured upon the residue precipitated nitrate of silver, indicating the presence of some fixed metallic chloride.[1] To remove this, the liquid was filtered from the animal matter it held in suspension, and slowly distilled a second time in a capacious retort. The produce of this distillation was co-

[1] Berzelius has particularly pointed out the difficulty of distilling viscid animal fluids in retorts, without the transference of non-volatile matters, which appear to be

lourless and transparent, and possessed a strong acid reaction, but gave not the slightest haze with nitrate of silver. It retained the vomit-smell, and along with it a faint acid odour, which was not perceptible to myself, but which others recognised, and pronounced to be that of vinegar.

To ascertain the nature of the acid, six ounces of the twice distilled liquid were neutralised with lime water, and evaporated to dryness. The lime-salt was then transferred to a tube-retort, and distilled with sulphuric acid slightly diluted. A colourless liquid collected in the receiver, which was at once recognized by its odour to contain acetic acid. This experiment was very carefully repeated with four portions of liquid distilled from different specimens of the ejected matter; the result was the same with all, an acid liquid was procured, which all who smelled it pronounced to be acetic acid.

I was the more careful in repeating these trials, that Berzelius has shown that in the analysis of animal fluids, other volatile odorous acids may readily be mistaken for acetic acid. He particularly notices that lactic acid, accompanied by a chloride, may seem to be an acetate, when moistened with sulphuric acid; the sharp smell of the evolved hydrochloric acid passing for the peculiar odour of the acetic. Even so expert a chemist as Leopold Gmelin has been deceived in this way. But the liquid from the stomach, the lime water, and the sulphuric acid, were all tested, and found to contain no chloride, nor did the distilled liquid contain any; moreover, the evidence of the acid being the acetic, did not depend on the perception for a moment of a faint and fleeting odour, when the salt was moistened with sulphuric acid; a drachm of liquid was obtained by each distillation, so that the odour could be perceived and identified by many persons. In farther trial of the acid, it was ascertained, that when digested in the cold on recently precipitated oxide of lead, it formed a soluble salt, having a sugary taste, and possessing an alkaline reaction. The acquirement of the latter property, depending on the formation of a subsalt of lead, has been shown by Liebig to be distinctive of acetic acid.

The proportion of acetic acid in the twice distilled fluid was ascertained in the usual way with the alkalimeter, by finding the quantity of carbonate of potass required to neutralize it. It was found by several trials, that, on an average, an ounce of the liquid neutralized 0.4 gr. of the carbonate; a quart (32 oz.) would therefore neutralize 12.8 gr., which correspond to 9 gr. of the hydrated (crystallizable) acetic acid $HO + C_4 H_3 O^3$.

The liquid remaining in the retort after the first distillation, was now examined and found still to be strongly acid. This property was traced in part to the presence of a small portion of free hydrochloric acid. The large amount of chloride of sodium which accompanied it made it difficult of detection; nor did I succeed in ascertaining its proportion. But I satisfied myself that it occurred only in small quantity, by the following experiments. Some ounces of the filtered liquid, along with a portion of red oxide of lead, were placed in a flask provided with a bent tube dipping into a wine glass, containing a very weak infusion of blue cabbage. The flask was then heated till the liquid boiled, and, by the quantity of vapour sent through the infusion, made the latter boil also. The cabbage was reddened, but not perceptibly weakened in tint; whereas had free hydrochloric acid been present in any quantity, it must have been deprived of hydrogen by the metallic oxide and chlorine evolved. When the experiment was repeated, with the ad-

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projected upwards by the bursting of the bubbles of vapour produced during tumultuous ebullition. Traité de Chimie, tome vii. p. 616. Ed. 1832.

Liebig has likewise called the attention of chemists to the remarkable power which vapours possess, of carrying along with them portions of bodies (such as nitre, boracic acid, chloride of sodium), which in their solid from resist dissipation by very high temperatures. When such bodies are dissolved in water, its vapour, even when far below the boiling point, determines their volatilization along with itself. Organic Chemistry in its application to Agriculture, 1st Ed. p. 111.

dition to the flask of a little sulphuric acid, the infusion was bleached in a few seconds. A similar experiment was made with the substitution of a solution of hydro-sulphuret of ammonia for the vegetable infusion, with a view to convert any evolved chlorine into muriate of ammonia. The hydro-sulphuret was then evaporated to dryness, and nitrate of silver added; a precipitate of sulphuret and chloride of silver fell, but when the latter was dissolved out by ammonia, its amount was found to be very small. Again, several ounces of the liquid from the stomach were boiled for some time with peroxide of manganese, and thereafter filtered. The filtered liquid was then tested for chloride of manganese, with caustic potash; a very slight precipitate of protoxide fell. As the quantity of hydrochloric acid discovered in this portion of the liquid was too small to explain its marked acidity, I made careful search for another acid, and soon detected the presence of one which was not volatile, but was destructible at high temperatures. Different processes were adopted for the isolation and purification of this acid, which was separated with much difficulty from the accompanying salts and animal matter. I state the results very briefly.

The concentrated liquid from the retort, which now possessed a dark brown colour and was very viscid, was evaporated on the water-bath till it ceased to lose weight. It formed a gummy mass, which remained moist after many hours' exposure to a heat of 212°, and retained unimpaired the power of reddening litmus strongly. The mass was boiled with successive portions of alcohol of sp. gr. 0.880, so long as the latter required an acid reaction; the greater part of the animal matter remained undissolved, but the alcohol was coloured dark-brown. On evaporating this solution on the water-bath, a viscid matter was left, strongly acid to litmus, and possessing a saline taste occasioned by the chloride of sodium dissolved along with it. The alcoholic extract was boiled with successive portions of sulphuric ether, recently rectified from carbonate of potass, and ascertained to be quite neutral. By this treatment, the extract lost its acidity, which was transferred to the ether; but it required a large quantity of the latter to remove it entirely. The etherial solution was of a pale yellow colour, and had dissolved very little of the salts or animal matter. When the ether was vaporized on the water-bath, there remained a thick yellow liquid, reddening litmus strongly. It was kept for an hour at the temperature of 212° without drying up; it could be dissolved in water and evaporated to its original consistence many times in succession, without dissipation of the acid; but when left in its most concentrated state, it absorbed moisture from the air, and became more liquid. When exposed in a capsule to a naked flame, it darkened in colour, the animal matter became charred, and the whole was destroyed.

Leopold Gmelin and others have shown that when hydrochloric acid is accompanied by much animal matter, it may be entangled in it, so as to escape dissipation by heat. It will afterwards be shown, that the acid was certainly not the hydrochloric; but to obviate any objection which might be founded on this fact, several portions of the liquid were treated in the following way. Six ounces were concentrated by evaporation, and boiled on protoxide of lead till the liquid had lost all acid reaction. By this treatment the hydrochloric acid should be converted into the insoluble chloride of lead. The liquid was filtered, decomposed by a current of sulphuretted hydrogen, boiled, and filtered a second time. It yielded a pale yellow fluid markedly acid, which was subsequently treated with alcohol and ether by the method already described. The liquid, after the second filtration, still precipitated nitrate of silver, for it contained all the chloride of sodium originally present. Although this was no real objection to the distinction of the acid from the hydrochloric, I was anxious to satisfy myself that it could be procured quite free from chlorine. With this object in view, several ounces of the liquid were boiled with a portion of carefully prepared and crystallized sulphate of silver, till it ceased to give a precipitate with the nitrate of the same base. A current of sulphuretted hydrogen was

hen passed through the liquid, to precipitate the excess of sulphate necessarily added, after which it was boiled and filtered. It now contained free sulphuric acid, and sulphates instead of chlorides; it was digested on oxide of lead, until it lost all acid reaction, filtered from the sulphate of lead and excess of oxide, and submitted again to sulphuretted hydrogen, till a precipitate ceased to fall. After being boiled and filtered anew, it was evaporated on the water-bath, and digested with alcohol, which left the sulphates undissolved. The product of these operations, which contained no inorganic acid, reddened litmus strongly.

Other processes were followed, which need not be detailed; none of them yielded an acid quite free from animal matter, nor was it ever procured in large quantity; but it presented the same properties in whatever way obtained. I did not ascertain the solubility of the acid in ether, till the inquiry was nearly concluded, so that some of the experiments hereafter mentioned were made with the alcoholic solution, which was less pure.

The following properties were ascertained by repeated trials to belong to this acid. It was soluble in ether, alcohol, and water, was quite destitute of odour, and neither volatile nor crystallizable. When the aqueous solution was digested on phosphate of lime prepared from bones burned to whiteness, and freed from carbonate of lime by boiling with acetic acid, and subsequent protracted washing with water, it dissolved a large portion of the salt; and it acted in the same way on the recently precipitated phosphate. It formed a soluble salt with oxide of silver, which strikingly distinguishes it from hydrochloric acid. It formed soluble salts likewise with oxide of lead, with potass, soda, ammonia, baryta, and lime; the last soluble also in alcohol. It sustained a heat of 300° without decomposition, but when the temperature was much elevated it inflamed along with the animal matter accompanying it, and suffered destruction. It was always found, however, that the animal matter gave way before it, for after charring had occurred to some extent, water still dissolved an acid from the mass.

On comparing these properties with the characters known to distinguish the organic acids of animal origin, they will be found to correspond closely with those of lactic acid, which accordingly I believe the acid I have been describing to be. Hydrated lactic acid ($H O + C_6 H_5 O_5$) is stated by Berzelius and Liebig to constitute a colourless syrupy liquid, inodorous, uncrystallizable, and not volatile, but decomposed at a temperature of 480°. It forms soluble salts with all the metallic oxides, and dissolves a large quantity of phosphate of lime. There is no single decisive test of its presence, nor does it present any other marked characteristics which could be sought for in the acid under examination. One method there certainly is by which the identity of this acid with the lactic could have been ascertained, an ultimate analysis namely, and discovery of its atomic weight; but it was impossible to put this plan in practice. Nevertheless, I think the conclusion will be admitted that the acid was the lactic.

Three acids then were found in the liquid—hydrochloric, acetic, and lactic; the first was present in too small quantity to be considered a morbid product. So far as the organic acids are concerned, it is impossible to say whether their mere presence constitutes a morbid sign, for the statements on record concerning the normal acids of the stomach are very incomplete and unsatisfactory. Dr Prout found in the stomachs of the lower animals no acid but the hydrochloric. Leuret and Lassaigne found only the lactic; Shultz only the acetic; Chevreul found only the lactic in the gastric juice of dog, and in the liquid brought up by an emetic from the stomach of a healthy man fasting. On the other hand, Gmelin found in the lower animals muriatic and acetic acids, and in the horse butyric acid. Dunglison, who analyzed the gastric juice from the stomach of St Martin the Canadian, whose case has been described by Dr Beaumont, found muriatic and acetic acids. Dumas, in his Lectures on Organic Chemistry, delivered last summer, [1841,] stated the normal acids to be the muriatic and lactic.

To perplex the inquiry still further, Gmelin admitted no distinction between lactic and acetic acid, or, at furthest, conceived the former to be the latter modified by adhering animal matter. Now that we know these acids to be quite distinct in composition and properties, the observations of Gmelin, otherwise so high an authority, lose much of their value.

In the preceding summary of conflicting opinions, it will be observed, that while some chemists contend for lactic, and others for acetic acid, as the normal organic acid of the gastric juice, no one professes to have found both acids in the same liquid, as was the case with that I have analyzed. One of these acids, then, was abnormal; but which? It would be useless attempting to decide this question by an appeal to the relative worth of the authorities quoted; it is not improbable that both acids are developed during healthy digestion. Lactic acid is so abundant, free or combined, in the milk, blood, urine, and other parts of the body, that its existence in the stomach is almost certain. As for acetic acid, it is a much rarer constituent of animal fluids, and there can be little doubt that lactic acid has often been mistaken for it.

In the mean while, however, till new researches are made on this subject, neither acid can be considered, by its mere presence, as a morbid sign. I may, however, remark, that lactic acid has already been found by Dr Graves in the liquid vomited by a sufferer from dyspepsia; and MM. Boutron and E. Fremy, in a paper on the lactic fermentation, observe, "It is known that the liquids contained in the stomach can, in certain conditions, present a strongly acid reaction. Now, the analyses made on this subject demonstrate, in these liquids, the presence of lactic acid.

One thing, however, is certain, and it is the main truth elicited by the analysis, viz. that the quantity of acetic acid found in this case was enormous. Although we have no account of the proportion discovered in the gastric juice or chyme, by those who maintain its presence there, it is certain that the quantity must be very small. Prout overlooked the presence of an organic acid altogether, and Gmelin, the great advocate of its existence, found only traces of it. But the quantity of liquid ejected at once by the patient, often amounted to more than two quarts, which would contain eighteen grains of acetic acid; and the amount is rather under-stated, for some portions of the liquid were necessarily lost in the distillations, which, moreover, were never pushed to dryness.

I am not aware of any case on record corresponding to this; but I forbear at present forming any opinion as to whether this remarkable development of acetic acid, and the occurrence of the curious organisms described by Mr Goodsir, were mutually dependent or merely coincident.—*Edin. Med. and Surg. Journal*, April 1842, p. 430.

SURGERY.

On Reduction of Dislocations of the Hip-Joint by the Method of Colombot. By Professor Williams.

At the meeting of the Surgical Society of Ireland on the 11th of December last, Professor Williams read the history of two cases of dislocation of the hip, on the dorsum of the ilium; in one, Colombot's method failed, but in the other it proved successful. He says that he was first induced to try M. Colombot's plan, by perusing a report on his treatment, by M. Bérard, to the Academy of Medicine in Paris. As the cases given are of no particular interest, we shall content ourselves with merely stating the method recommended by M. Colombot, which is as follows:—"In place of practising graduated extension by any mechanical force, all the muscles surrounding the

joint are placed in an intermediate state between flexion and extension, so that they may be in the greatest possible state of relaxation; they are then to be taken by surprise, by suddenly rotating the limb—a manœuvre which infallibly replaces the head of the displaced bone." For the hip-joint, the following are the rules to be observed:—"The patient is placed erect, the weight of the body being supported on the sound limb; the trunk is then flexed, so that the thorax rests on a bed or table, corresponding to the height of the pelvis, and the patient grasps with his hands the opposite edge of the bed or table, with the view of fixing the trunk." "The surgeon stands behind the patient, on the inner side of the affected limb, if the displacement is anterior to the cotyloid cavity,—external to the limb if the case be one of posterior dislocation; the dorsum of the foot is grasped with one hand, and the leg is bent on the thigh, while with the other hand placed in the popliteal region, moderate pressure from above downwards is excited, so as to put the muscles insensibly on the stretch. The limb is at the same time directed somewhat from within outwards, and from behind forwards, in order to dislodge the head of the femur from its new situation, and render it moveable. The surgeon now promptly communicates to the thigh an articular motion, rotating it circularly from within outwards, according as motion in one or the other direction may be more conveniently effected, and the head of the bone re-enters its articulation with a snap. By this process, the head of the femur is replaced in the cotyloid cavity, which becomes the centre of the motion of circumduction." The above directions are taken from M. Bérard's report. After quoting these, Professor Williams goes on to show, that in general "traction has been excited on the dislocated limb, in a direction not *very materially* deviating from parallelism to the axis of the body;" and that as the greatest obstacle to reductions of the bone is the contraction of the muscles, and that these are most tense when the limb is extended, that consequently the efforts used have been in a wrong direction, and that more force has in general been applied than was at all necessary. He next quotes various surgical authorities, who recommend the limb to be flexed to a right angle with the trunk, some of whom, as Hey and Kirkland, only adopted and advised this plan to be followed in dislocations into the thyoid foramen, but other surgeons recommend the bent position in all dislocations. Mr Pott says, "In dislocations of the os femoris, (*be it in what manner it may,*) *a straight position* of the leg and thigh *will always increase the difficulty of the reduction;*" while "that very distorted and bent position in which the patient will always place it for his own ease, is, and must be the posture most favourable for reduction, because it is, and must be the posture in which the muscles most likely to make opposition are most relaxed, and rendered least capable of resistance." Professor Williams is inclined to think, that the patient should be laid on his back, and the pelvis fixed by a strong sheet placed over the spines of the ilium, and held by two assistants, while any necessary traction might be made by an assistant putting his arm in the popliteal space. He attributes his want of success in his first case to a defect in the manipulation employed by him, and that a similar result will not happen to him in any future case he may have. He says that he lays no claim to originality, —that he "merely wishes to recommend to the notice and consideration of his professional brethren, a mode of practice, which, though by no means new, is yet diametrically opposed to the practice of the great modern authorities of surgery, and has a strong body of both rational and experimental evidence in its favour. Beyond all dispute, the mode of practice for which I contend, is *often* successful; whether it may be generally so, experience can alone determine, but even if it succeeds in a small number of cases only, it should yet be preserved in practice, and always be had recourse to before adopting the severer and more violent proceedings now generally resorted to in the first instances."—Abridged from the *Dublin Medical Press*, 5th Jan. 1842.

Treatment of Strangulated Hernia by Opium. By George Cooper, Esq., Surgeon, Greenwich.

[In the Monthly Journal we have already drawn the attention of surgeons to this important subject. The following cases, published by Mr Cooper, are interesting.]

1. John Brown, aged fifty, with a large inguinal hernia, was seized with symptoms of strangulation on the 16th of November. He applied to Dr Mitchell on the 18th, at whose request I saw him. The symptoms were most urgent; and having failed with the taxis, we proposed an operation, which he refused to submit to. On the 19th Mr Busk saw him, and recommended me to try large doses of opium, as Mr Bransby Cooper had informed him of a surgeon in Somersetshire, who for the last eighteen years had so treated such cases. I immediately gave four grains, which relieved the pain and sickness, but produced no change in the tumour. In four hours I repeated the opium, and five hours after gave a third dose of four grains. *20th*, Free from pain and sickness; the hernia in the same state; he had occasional sickness; and a few doses of opium were given at intervals, till the bowels acted, without any apparent alteration in the hernia, from which time he quickly recovered, and the hernia returned by degrees.

2. Mrs Woodhouse, aged seventy, was taken with symptoms of strangulated hernia on the 22d of January, and sent to me on the 25th. She had a femoral hernia, which I could not reduce: she is sure it was not present before the 22d, when she had a violent fit of coughing. I gave her two grains of opium, with the effect of relieving the pain and sickness; five hours afterwards two grains more opium were administered. The following morning she said the hernia was gone, and that she was quite well. There was no return of bad symptoms, but the bowels did not act till the 29th.—*London Med. Gazette*, 18th Feb. 1842.

Case of Spontaneous Priapism during Thirty Hours, with Retention of Urine. By M. Demeaux.

A young man, twenty-two years of age, of a good constitution, and of a fair complexion, with a largely developed genital system, came to Paris in the month of September. He had been in the habit of indulging in sexual intercourse with moderation. On the night of the 10th, after no irregularity of diet, and after *coitus*, which was attended by an extraordinary degree of voluptuousness, had been performed, the erection of the penis still continued, accompanied with a burning sensation in the perineum, and along the course of the urethra. From time to time exacerbations took place, followed by a general spasm, during which there was a kind of emission. When M. Demeaux saw him at three in the morning, he found him much debilitated, with an anxious countenance, burning skin, bathed in perspiration, and a pulse 110, full and hard. The spasms and the emissions still continued. The penis, much distended, and in contact with the belly, felt as hard as a piece of wood. The glans was of a purple colour, and the testicles, drawn towards the abdominal rings, were painful to the touch. The bulb was swollen, and formed a hard tumour about the size of a hen's egg; there were urgent but ineffectual efforts to pass urine. He was ordered to lie on a hair mattress; to be bled to four palettes; to have a cold hip bath; an enema with two grammes of camphor, and to keep a bladder of ice between his thighs. *Five in the afternoon.* The emissions had ceased since taking the cold bath, but the local symptoms still the same; to have a draught with fifty centigrammes of camphor; fifteen leeches to be applied to the perineum. *Eleven*

in the evening. The spasms and emissions have returned; the bladder can be felt, forming a round tumour in the hypogastrium, and exceedingly painful on pressure. Leeches to be applied to the perineum, in such a manner as to keep up a continued loss of blood. At two in the morning, after sixty leeches had been applied, the penis became somewhat smaller. He was then placed in a hip bath, at the temperature of the surrounding air, when he experienced indescribable relief. In about ten minutes he was able to make urine; he was taken from the bath, and immediately fell asleep. From this time all went on well, although the catheter had to be used several times. At the end of four days he was able to leave Paris, but his left testicle was still painful on pressure.—*Gaz. Méd. de Paris*, 4th Feb. 1842.

CASES IN WHICH, AFTER THE FAILURE OF THE OPERATION FOR CATARACT ON ONE EYE, THE VISION OF BOTH EYES WAS RESTORED BY OPERATING ON THE CATARACT OF THE OPPOSITE SIDE. By M. SERRE, Professor of Clinical Surgery at Montpellier.

M. Serre relates three cases, in which, after the lapse of months (in one case three years) from the unsuccessful operation for cataract upon one side, the sight of both eyes was restored by operating on the other cataract. The conditions common to all these cases were, a momentary recovery of sight immediately after the first operation, a free state of the pupil with no obstacle to the arrival of the rays of light at the retina, and, to all appearance, only a partial extinction of the sensibility of that membrane. Under these circumstances, it would seem that the sudden stimulus of the light admitted into the eye newly operated on, is sufficient to call into sympathetic action the dormant nervous energy of the retina on the opposite side. And if more observations of the same nature should present themselves, it may come to be a question whether, in certain cases of amaurosis, particularly in the asthenic form, light may not be advantageously used as a stimulant to the eye by means of glasses adapted to that purpose. Again, instead of declining to operate for cataract so long as vision remains in one eye, though in an imperfect degree, may we not attempt the operation under certain circumstances, with the very object of restoring vision to that eye! Lastly, in opposition to the ideas of some ophthalmologists, may not the excitement produced by the operation, or by the contact of light, contribute to restore vision, in some cases of cataract complicated with incipient amaurosis?—*Gazette Médicale de Paris.*

ON THE TREATMENT OF VARIX BY MEANS OF THE "CAUSTIQUE DE VIENNE." By M. A. BERARD.

The mode in which M. Bérard applies this kind of treatment has some peculiarities, which he holds to be of great importance in conducing to its success. In the first place, the point he selects for applying the caustic is below the knee, over the course of the *vena saphena interna.* This will generally be found sufficient to remove any varicose veins that may exist in the thigh; and even though they should not be removed, experience proves that they will cause no further inconvenience if the operation succeeds in respect to the leg; while any dangerous accidents after the application are much more likely to occur when it is used above the knee than below it. The obliteration of the vein at this point is usually sufficient to cause the disappearance of the other varices in the leg, though it may sometimes prove necessary afterwards to apply the caustic to one or two other veins, should they continue enlarged. In the next place, instead of making several successive applications of the caustic upon the same point, he applies it in sufficient quantity, or for a sufficient space of time, to burn at once down to the

coats of the vessel. This will be effected by allowing a thin layer of the substance, brought to the consistence of a paste by the acid of alcohol, to remain on from a quarter of an hour to half an hour. Lastly, he produces a long cicatrix, instead of a circular one, by applying the paste for some way downwards along the course of the vessel. M. Bérard states the advantages of the application used in the manner here prescribed to be, that it requires little or no suspension of the patient's ordinary occupations, that in general one single operation will prove sufficient, that it is seldomer liable to be followed by serious accidents than the modes commonly in use, and that it hardly ever fails in effecting a permanent cure.—*Gazette Médicale de Paris.*

On Abscess of the Iliac Fossæ, and the point where they should be Opened. By M. Barthelemy.

When abscesses of the iliac fossæ, external to the peritoneum, do not penetrate the intestine, they have a much greater tendency to proceed towards the lumbar, than any other region. M. B. says, when we have to do with a case of this kind, the lumbar regions ought to be examined more frequently than they generally are, and as soon as pus is discovered, it should be evacuated at this point, and not palliated by temporary measures, until we see the abscess penetrate the pelvis, when it may cause the death of the patient. The opening of these abscesses is neither a difficult nor a dangerous operation, as they lie between the abdominal parietes which we incise, and the peritoneum which we avoid. The following is the method he recommends. A vertical incision an inch and a half long, and four inches and a half on the outer side of the lumbar spines, is to be made through the muscles, until nothing is found to intervene between the abdominal cavity, but the transversalis fascia; a grooved probe or director is then pushed into the abscess, in the direction of the iliac fossæ. The patient is to be kept on his back during the cure. We do not wish, says the editor of the Gazette Médicale, to raise any doubt on the advantages of the operation recommended by M. Barthélemy. The making the opening in the most dependent part, is following the principles laid down by Dupuytren, when he advised patients, in whom this kind of abscess was opened in the groin, to lie on the belly. But as the abscess in the lumbar region is far from the surface, there is some fear of its not being discovered early, and the opening being delayed too long; on this account, it should not be made there from preference, but from necessity, and only when fluctuation is more distinct in that place than in any other.—*Gazette Méd. de Paris*, Feb. 12, 1842.

Scriveners' Spasm, Cured by Division of Muscles. By Professor Stromeyer.

The disease which may be familiarly called scriveners' spasm, and consists in permanent contraction of the long flexor of the thumb, is not very rare. Several cases have been published in Germany by Albers, Heyfelder, and Kopp; and in France by Cazenave and David. The chief characteristic of this affection is an absolute incapability of using the pen for writing, although the strength and motions of the hand remain unimpaired for all other purposes. Some authors regard it as a species of spasm; others, as depending on paralysis. It is generally permanent, but occasionally appears at intervals, and then is commonly brought on by long continued use of the pen. This affection, though apparently slight, is most obstinate, and resists every method of treatment that has hitherto been employed against it. The following cases, which we abridge considerably, had baffled the skill of Professor Stromeyer, until he had recourse to division of the flexor muscle, which was attended with complete success.

CASE 1. J. M., a public writer at Hanover, laboured under this disease during two years. A celebrated physician had tried every kind of remedy without avail. Whenever he began to write, the muscles of the ball of the thumb were seized with spasm, which compelled him to desist, but the spasms did not appear at any other time. M. Stromeyer also tried a variety of means ineffectually, and then divided the small flexor muscles of the thumb. This likewise failed, and the sensibility of the palmar surface of the thumb was destroyed. It was now clear that the action of writing depended on the long flexor, but the patient refused to permit any more operations to be performed on him.

CASE 2. The subject of this case had suffered under the disease for fifteen years, when first seen by M. Stromeyer. The rigidity of the muscles of the ball of the thumb was not, however, present, but the last phalanx of the thumb became suddenly flexed, whenever the patient attempted to write or play on the piano.

The long flexor was not permanently contracted, nor did it impede any other motions of the hand. From the deep situation of the muscle it was not easy to divide it separately. M. Stromeyer bent the first phalanx strongly to a right angle, and at the same time turned the thumb as much out as possible; he then passed a very small, curved tenotome underneath the tendon, and divided it. The sensibility of the thumb was very considerably diminished after the operation, but was restored, on the dorsal aspect the next day, and on the palmar aspect within a fortnight. The natural power of moving the thumb, also, returned at the latter period, and the patient was able to write or play on the piano without the slightest return of the spasm. —*Arch. Gén. de Méd.* Jan. 1842, and *Prov. Med. and Surg. Journ.*, Feb. 1842.

REMOVAL OF A BALL FROM THE KNEE-JOINT BY THE SUBCUTANEOUS METHOD.

In 1813 a soldier was shot in the right knee. The ball penetrated about two inches above the inner side of the articulation. Suppuration took place, but in three months he was able again to resume his duty. In a year after, he began to suffer from uneasiness in the joint, and he was not long of discovering a tumour which slipped from his fingers, but which he knew to be the ball. He entered La Charité in March 1841, when M. Velpeau determined to extract it. The patient being placed on his back, the ball was pushed upwards and outwards, and retained in that situation by the fingers of an assistant. An incision of a centimetre and a half in length, and three centimetres from the ball, was made with a bistoury. A small tenotome was then introduced at the wound, and carried towards the ball, dividing the capsule of the articulation, and the superincumbent layers. As soon as this was accomplished, the ball escaped to the external wound, when, by enlarging the incision, it fell out. Before the ball was removed, pressure was applied between it and the joint; but notwithstanding, half a glass of synovia flowed from the knee. The wound was brought together, and slight pressure maintained over the articulation. During the cure he suffered from some gastric irritation, but the knee always remained well. He left the hospital quite cured in three weeks.—*Gazette Méd. de Paris*, 4th Feb. 1842. *Annales de la Chir. Française et Etrang.*

MIDWIFERY.

On the Management of the Placenta. By Joseph Bell, Esq., Surgeon, Barrhead.

Mr Bell relates a number of cases to prove the efficacy of a mode of managing the placenta, recently recommended by Mr Murphy. It is chiefly applicable to cases where it is usually thought necessary to introduce the hand for the purpose of extracting the placenta, and consists in the application of a broad bandage round the abdomen, and firm pressure made with both hands on the fundus uteri. The same practice he has also found of use previous to delivery, in cases of inefficient pains. Mr Bell seems strongly opposed to the practice of introducing the hand into the uterus to extract the placenta, under any circumstances, and while he admits that there are cases of retained placenta, in which the above measures are attended with very little benefit, recommends that in them the child should at once be put to the nipple as a preferable course to the usual practice. This, he says, has always been followed by uterine contraction, cessation of the flooding, and expulsion of the secundines.—*London Medical Gazette*, Jan. 14.

Cæsarean Operation Successfully Performed, saving both Mother and Child.

Dr Königsfeld, in Achen, (Aix-la-Chapelle), was called to attend a woman who had been in labour for several days. She was of small stature, and her great distortion showed she had formerly suffered from rachitis. The congregate diameter of the pelvis was not above 2½ inches, and the os uteri felt almost scirrhous; its aperture was as large as a crown piece. In these circumstances, delivering the child alive was out of the question, and the cæsarean operation was resolved on; the incision beginning half an inch to the side of the navel, diverged to the *linea alba*, and ended close upon the pubis, being six inches in length, for the space between this and the navel was very short.

After this the uterus was opened in the same direction, and the body of the child, whose right shoulder protruded at the opening, slowly withdrawn. It required some trouble to extricate the head, which was held fast in the womb, after which the placenta was removed. The child was a well-formed living girl. The further course of the case presented nothing remarkable. Slight venesection was had recourse to on account of some inflammatory excitement, and emulsion of aqua laurocex was administered. The patient was in perfect health in four weeks afterwards, and also the child, which she nursed.—*Casper's Wochenschrift*, 1840, No. 49.

MATERIA MEDICA AND CHEMISTRY.

Some Account of "Clinkers," a New Remedial Agent. By Conway J. Edwards, M.R.C.S., Batheaston, Bath.

The addition to our very extended catalogue of medicines, to which I would wish to draw the attention of the profession, is of a nature so simple, that medical gentlemen will rather be inclined to doubt its possession of any medicinal properties than to believe that it contains those which can effect great and beneficial changes in diseases, which frequently baffle the most eminent

of the profession. Indeed, the very name of "clinkers" (under which title I beg leave to introduce it) is calculated to set the seal of condemnation on the substance, without affording it the benefit of further consideration; nevertheless, in face of the great obstacle to a "fair hearing," which such a name must of necessity impose, I have no hesitation in advancing an opinion, that its powers as a tonic and colorific are of no mean order; and this statement is supported by the experience of Dr Watson of Bath, who was the first initiated in the mystery of its preparation, and the first to sanction its use.

"Clinkers" is the refuse of the blacksmith's forge, and differs from common ashes and coke in its greater specific gravity, component parts, and external appearance. As a medicine in cachectic disorders, particularly those of females, it has been used for many years, by "knowing old women" in certain manufacturing districts; and the success which attends its exhibition, particularly in chlorotic disorders, is such as to have won for it the title of "specific."

The following is the formula for its preparation:—The bluest and heaviest clinker, being selected from a mass, is reduced to an impalpable powder (a work of no small difficulty, on account of its metalloid nature.) Any quantity of this powder may be mixed, with a sufficiency of treacle, to form a stiff paste; and to every eight ounces of the mass, half an ounce of magnesia, and the like quantity of ginger, must be added. Thus formed, it is any thing but inviting to the eye; but this can be remedied by using honey in lieu of treacle, and adding half a drachm of the peroxide of iron to the compound.

The directions which accompanied the formula were as unique as the formula itself. It must be taken three successive days and nights (twice a day), for three days; omitted for a like period, and so continued until the course which has been decided upon should be finished. The dose is a teaspoonful. Absurd as these directions seem, they are not so ridiculous as they appear, for experience has demonstrated that constitutional irritation supervenes, unless some decided interval is allowed at stated periods, during a course of this remedy.

The first time I heard of this medicine, was after it had effected a happy change in the constitution of a young lady, who had been suffering from some internal but obscure disorder, for several years. The circulation, through the minute ramifications of the blood vessels, was reduced to its lowest ebb, while the fluid which circulated in the larger channels was a turbid brown, instead of the rich colour for which blood is remarkable. Under such a state of things, the exsanguineous appearance of the skin may be readily conceived. She had been under the professional care of two medical men before I was consulted, and, when called in, I found her suffering from all those symptoms of debility, which characterise uterine and ovarian disturbance. From some remarkable symptoms, I was led to fix the seat of the disease in the ovaries. During my attendance I tried every medicine, and combination of medicines, which bore upon the case; but no permanent benefit resulted from any of them: the only preparations which produced a tolerable effect were those of iron, and among them none possessed such power as the ioduret. The constitution became evidently impaired; the feet swelled; there was distension; and disorganization appeared to be making rapid advances. A very distinguished physician was called in, but could give no opinion on the nature of the case. He attended for several weeks with no success; during this gentleman's attendance, most agonising pains in the head came on; they were neuralgic; for the relief of these a veratrine ointment was applied; then veratrine delphia and morphine, suspended in oil; æther and ammonia were rubbed in: all these failed. I then proposed passing an electric current through the affected part, to which assent was given, but with a similar result. Le Fai's ointment was advised by some friend, and, I must certainly admit, with partial success. I never witnessed sufferings so acute—

so continued. Another eminent physician was now consulted. "We must," he said, "build up the constitution; it will be a work of time, but it must be done." And a work of time it might have been, for after a considerable attendance no radical good was effected. Still, the principle on which this gentleman acted was sound, and although, as regarded the original affection, things had not improved, there was no retrograde movement, and possibly there might have been an important and visible advance, had the attendance extended over three or four years. Brighton was resorted to and failed; the Isle of Wight, Clevedon, and several other maritime places, tried; but in vain. Medicine, diet, and change of air, were alike unavailing. Dr Watson, of Bath, was called in, but no decided opinion could be pronounced, and, consequently, no very decided plan of treatment adopted. The case seemed hopeless, when a young lady, whose suffering had been similar to those of this patient, and whose case had baffled the skill of her professional advisers, recommended her to have recourse to the remedy which had restored her to health; a large number of cases were also adduced in favour of its efficancy. The offer was eagerly embraced, and, Dr Watson's consent being obtained, the trial of the "clinkers" commenced.

The result exceeded all expectations. In two months the feet ceased to swell; the tumidity of the hypogastric and umbilical regions subsided; the functions of the stomach were restored; the small wiry pulse of above 100 was converted into a healthy beat of 80; the neuralgic pains ceased; and, what was most extraordinary and pleasing, the capillary circulation became so improved, that the skin assumed a vital hue, and the cheeks denoted returning health, every morbid symptom disappeared, except an excess of uterine secretion. The happy change surprised the professional attendants, as well as the patient's friends and relations; and without being at all enthusiastic in praise of the "clinkers," it may be fairly admitted that the beneficial results in this interesting case were owing to its medicinal properties.

Its success here made me anxious to test its powers further; and the lady having been so obliging as to give me the formula for its preparation, several patients were collected in whom the exsanguineous state of the skin, and wasting of the muscular fibre, were indicative of the morbid manner in which the functions of the stomach, alimentary canal, and uterus were carried on. Within a month from commencing the use of the clinkers, a striking improvement took place in the appearance of the patients, and before the termination of two months every unfavourable symptom disappeared. One case, in particular, is well worthy of especial notice, by reason of the scrofulous condition of the submaxillary glands, and the ulcerated state in which one of them had been for several years, and which healed during the course of the new medicine.

I may observe, *en passant*, that previously to a trial of the clinkers, this young woman had been under professional treatment for some time, without deriving any benefit from it.

The pulse was weak, and nearly 100; catamenia irregular in appearance, variable in quantity, and unnatural in composition; appetite, and sleep bad; tongue foul; and what, perhaps, may be termed hysterical hypochondriasis, existed to a great degree. A gentle cathartic of infusion of senna, with tartrate of potass, was given for a few successive days before the clinkers were commenced. She had not taken the new medicine six weeks, when most of the distressing symptoms disappeared, and her personal appearance became so improved, that her friends scarcely recognised in the ruddy girl before them, the pallid and unhealthy creature she had once been.

It appears greatly to benefit cases of simple indigestion, a few doses being capable of removing the most distressing symptoms. In that peculiar condition of the secretion of the bowels, which is said to favour the formation or propagation of worms, it has proved advantageous in two ways—one, by its mechanical action; the other, by its tonic properties. This was an accidental discovery made during its trial in a case of leucorrhœa.

When the medicine is taken for the first time, a train of symptoms frequently supervenes, which would induce a stranger to its *modus operandi* to regard it as a dangerous compound. A great weight is felt in the epigastric region, accompanied with a burning sensation; sensations of sickness, followed by those of fainting, come on; these are soon relieved by eructations of flatus. Some complain of pains in the limbs, and particularly the joints; others of tightness across the forehead, with giddiness; while all are troubled with heat, dryness of the mouth, and great thirst. At the second dose the symptoms are moderated, and the third is generally taken with impunity. After it has been persevered with for a short time, sensations of a different character arise; these are hunger, and a feeling of health and energy, to which, perhaps, the patient has been a stranger for many years; then the complexion, if pale, commonly receives a ruddy tint, and the muscular fibre becomes firm and enlarges. After the first dose the feces are like pitch, the urine generally pale, and large in quantity; the bowels, if previously costive, become regular in their action; the pulse gets full, and the skin pleasantly relaxed.

To sum up its medicinal properties, it may be said that the clinker is tonic, stimulant, anthelmintic, and colorific, adapted generally to a leucophlegmatic habit, and where dyspeptic, chlorotic, and scrofulous complaints exist. "Its use would be contraindicated where an inflammatory diathesis prevails."

The quantity of metal which clinker contains varies considerably; the best is obtained from a blacksmith's forge, and the most ponderous, darkest, and metallic in appearance, is that only on which dependance can be placed. The light slate-coloured clinker is inert.

I need not offer any remarks on the magnesia and ginger, which are added in the formation of the linctus; but I may observe, that if the ginger be omitted, violent griping ensues. After the medicine has been given for a few weeks, no bad symptoms arise if it is exhibited more frequently than at the beginning of the course.

From the imperfect analysis which I have made of the clinker, I should say that, with the usual substances found in coal partially decomposed by heat, a metalline appearance pervades the mass, which seems to be iron combined with carbon, so as to form steel; no doubt the metal exists likewise, both as a sulphuret and a carbonate of the protoxide, but neither of these would afford the blue tint for which the clinker is remarkable. That it is not titanium is evident, for that metal is "like burnished copper," and so little fusible, that the heat of the oxyhydrogen blowpipe, when in action, is scarcely able to touch it—at least, if we may believe our professors. If, therefore, the heat of highly compressed gases intimately mingled be just capable of oxidyzing titanium, can we expect that the fire of the common forge would do so? From whence, then, do we get titanic acid? Surely not in or from the various new compound bodies which are formed during the decomposition of the coal! Here we have first a mass of small coal, with, perhaps, charcoal, kindled into a flame; over this water is thrown, the decomposition of which increases the heat. When the temperature is at its maximum, a bar of soft iron is plunged into the centre, and rapidly reaches the temperature of the surrounding substances; particles of highly ignited metal are thrown off; some in a semifused state unite with particles of carbon, and perhaps form steel; others combine immediately with the oxygen of the water, and become a protocarbonate of the protoxide, while other portions form a sulphuret, and appear through the whole mass as new compounds endowed with new properties, which had no existence before the interchange of elementary principle. But this is not all; as the coal is decomposed it is raked off and thrown on one side, fresh supplies being added, until every component particle of the iron is raised to a white heat; it is then taken from the fire, placed on an anvil, and subjected to a succession of blows from the sledge hammer; this drives off large *flakes* of metal, many of which bury themselves in the masses of coke which have been cast aside, and are known as

"clinkers." Now, if a portion of this be mixed with nitrate of potass, and strongly heated, a brown powder is formed, in which (had titanium existence) would be mingled with the white peroxide; a solution of gall nuts would then produce the orange red colour, which is said to be characteristic of titanium; and were a rod of zinc suspended in the solution, a purple-coloured powder would be precipitated. In making the experiments, I strictly adhered to the rules laid down for testing its presence, but perhaps, as I did not discover titanium or its oxide, it was owing to want of dexterity in the manipulations.

That the singularly beneficial effects which the clinker produces in certain conditions of the system cannot result solely from the iron or steel which it contains, the experience we have of those metals, and their preparations, sufficiently declare: some new combination must exist, to effect such singular changes; what it is remains to be proved. Electricity has been advanced as the cause, but even admitting that galvanic currents could be generated, they would be so weak in power and small in quantity, as to be incapable of producing any results, while their source would prove so limited, that the electric evolution would cease before the linctus could be formed.

This is all which I have to advance on the subject at present. I must apologize for the imperfect manner in which it has been treated, yet hope that those members of the profession who have honoured these observations with a perusal, will divest themselves of all prejudice against the use of so humble a preparation, and give it that impartial trial which it would seem to deserve.—*Provincial Med. and Surg. Journal*, Feb. 5, 1842.

On the Styptic Effect of Creasote.

A robust countryman divided the ulnar artery with a sharp knife, the consequence of which was repeated bleedings, which, however, were staunched by surgical aid. Three weeks afterwards, hemorrhage returned, and Dr Burdach of Luckan was sent for. He found the wound, which at first was a simple puncture, livid at the edges, and expanded to the size of the palm of the hand, by a spongy growth from the bottom. This spongy mass was in a gangrenous condition, and prevented the examination of the wound; the arm was swollen from the shoulder to the finger-points; it could not be moved, and was excessively painful. Dr Burdach had only the choice between actual cautery and creasote left, for in such a state of the arm, tying the artery was out of the question. He poured 3ss of creasote, (*freed from empion*) into the wound. This gave the patient no pain; nay, after it he enjoyed refreshing sleep for the first time since the accident. There was no more hemorrhage; the pouring in of the creasote was repeated morning and evening, and the spongy mass gradually diminished, and three days afterwards, under the co-operating influence of bandages moistened with creasote, Ol. Tereb. and Balsam. indic., loosened itself from the bottom of the wound. The divided artery was no more visible, the swelling of the arm decreased, and the complete cure shortly followed without any relapse.—*Medizinische Zeitung*, Jahrg. 1840, N. 31.

STATISTICS.

Summary of the Mortality Tables of London for the year 1841.

These tables include the metropolis, and the adjacent suburban districts, comprising in all an area of 70 square miles, and a population of 1,870,727 persons. The total number of deaths was 45,284. Of these 22,995 were

males, 22,288 females. 20,780 were under 15, and 24,433 above 15 years of age.

In the tables, the area is divided into five districts, and the rate of mortality is found to differ in each, according to the local situation, and the circumstances and occupations of the inhabitants. Thus, in the western district, embracing Westminster, St James, Kensington, &c., it is 2202 per cent; in the northern, embracing St Mary-le-Bone, St Pancras, Islington, and Hackney, it is 2,267; in the central, or what is properly called the city, it is 2505; in the southern, embracing Southwark, Greenwich, Camberwell, &c., it is 2539; and in the eastern, embracing Shoreditch, Whitechapel, Bethnall Green, &c., it is 2558, shewing a difference of 356 per cent. between the western, which is the wealthiest and best aired district, and the eastern, which includes the poorest and most low-lying parts of London, along the banks of the Thames. The average mortality over the whole, is 2429 per cent. The central district is entirely urban, the eastern nearly so, while all the others comprehend a considerable extent of surrounding country.

The tables exhibit the number of deaths which occurred in each week, and their causes. The diseases are classed as follows: I. Epidemic, endemic, and contagious. II. Spasmodic, embracing, 1st, diseases of the nervous system; 2d, of the respiratory organs; 3d, of the organs of circulation; 4th, of the digestive organs; 5th, of the urinary organs; 6th, of the organs of generation; 7th, of the organs of locomotion; 8th, of the integumentary system; 9th, of uncertain seat. III. Deaths from old age; and IV. Deaths by violence.

The mortality from the exanthemata and typhus, amounted to 3840, of which 1053 were from small-pox, and 1151 from typhus—certainly a very small number, considering the extent and circumstances of the population. The deaths from consumption were 7326, or about 16·17 per cent. of the whole, being nearly the same proportion as in the rest of the kingdom. The mortality from the other principal diseases, was as follows: Hooping cough, 2278; hydrocephalus, 1739; convulsions, 2778; pneumonia, 3668; asthma, 1351; dropsy, 1720; debility, 1114; old age, 3373. The violent deaths amounted to 1148. The mortality in the first quarter, amounting to 13,713, far exceeded that in the others, which differed little in this respect, being 10,404, 10,406, 10,761, respectively. The month in which the greatest number of deaths occurred, was January—4687; that in which the least, July—3050, showing a difference of 50 per cent. The higher mortality of the first quarter holds good with respect to all the great classes of disease, whether epidemic, endemic, or spasmodic, with the single exception of diseases of the digestive organs, from which the greatest number of deaths occurred in the autumnal quarter, owing to the prevalence of gastritis and enteritis at that season. In the case of individual diseases, there are some exceptions to this remark. Thus, while the mortality from pneumonia, bronchitis, and asthma, was far higher during the first quarter, that from consumption was highest during the second and third quarters, and from croup in the fourth. The number of sudden deaths, from unknown causes, was greatest in the first quarter, and the deaths in child-birth were twice as numerous in the first, as in the second and third quarters.

An important feature in these tables is, that they contain a register showing the highest, lowest, and mean temperature of each week. The daily mean temperature of the whole year was 51° 7″ Fahr.

There are also added meteorological tables, deduced from observations made at the apartments of the Royal Society. One of these is for each of the eleven years from 1831 to 1841, inclusive, with the number of deaths registered in the four years from 1838–1841. This period is too short to allow of any satisfactory conclusions being drawn with respect to the influence of atmospheric causes upon mortality. It may be stated, however, that the year 1838, in which the greatest number of deaths occurred (52,698) was

also the coldest; while in 1841, in which the number was smallest (45,284), the temperature was considerably higher, and more rain fell than in any of the other three.

Statistics of the "Hôtel des Invalides" of Paris.

The patients admitted into this establishment are classed in the following manner, according to their ages and their infirmities :—

Blind,	154
Both limbs amputated,	12
One ditto ditto,	313
Both arms ditto,	9
One ditto ditto,	226
Paralytic or impotent,	237
Epileptic,	12
Insane,	31
Silver chin or nose,	8
Lame, or incapable of walking,	133
Feet frost-bitten in Russia,	28
Maimed in the hands,	132
Various other wounds,	1027
Lay brothers,	178
Of the age of 70,	516
Of the age of 80,	37
Total,	3051

The ordinary number of admissions per annum is 200.—*Journal de Méd. et de Chirurg. Prat.*, Oct. 1841.

FORENSIC MEDICINE.

Insufficiency of Albumen as an Antidote to Corrosive Sublimate.

After pointing out Orfila's mistake in supposing albumen to be an antidote to the bichloride of mercury, the author remarks : "It is known that certain ammoniacal salts, if present in sufficient quantity, *entirely prevent the precipitation of corrosive sublimate by albumen.* Muriate of ammonia is one of these, a salt existing in the animal fluids. Muriate of soda, another salt found universally in animal fluids, has the same effect, though in a less degree. I might add many others, but already enough has been said to show *the inadequacy of albumen as a test for corrosive sublimate.* As regards the detection of mercury, the dismissal of albumen from our list of reagents is not to be regretted, while we possess the means of reproducing that base *in its metallic state*, a condition that ought, as in the case of arsenic, to be insisted on at all times by our public tribunals."—John T. Barry, *Pharmaceut. Journ.*, No. vii. Jan. 1, 1842.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

ACADEMY OF MEDICINE AND SURGERY OF MADRID.

January 3, 1842.

The session of the academy for the season was opened on the 3d of January, by Dr Mariano Jose Gonzalez y Crespo, who delivered upon the occasion a discourse upon the history of the principal scientific academies of Europe. After stating that such institutions seemed to owe their origin to investigators finding the importance of union and intercourse with one another, in promoting their researches in the wide domains of science; he briefly recapitulated, in illustration of this, the history of the various academies of Athens, Alexandria, Bagdad, and ancient Rome. Regarding those established in Spain by the Arabs, he made the following remarks:—

"The erudite Spanish Arabs were not less solicitous for the establishment of scientific academies in Spain. The most influential men of that celebrated nation, then as enlightened and powerful, as now she is ignorant and depressed, founded such institutions in various parts of the globe; but without any doubt, the most pre-eminent and the most famous of them all was that established in the eighth century at Cordova, the idolised land of my birth. The renown which this academy acquired was such, that, according to a native historian, it was esteemed the first in the world. Crowds of Spanish Arabs, Christians of the Peninsula, and natives of other countries flocked to it for the purpose of acquiring knowledge, and completing their education. In the tenth century, the library contained more than 225,000 volumes; and such was the state of matters in Spain, when the rest of Europe was lying in indolence and barbarism,—buried in the black dense clouds of the thickest ignorance! Thus it was that Cordova alone, (the birth place of Seneca,) produced about 114 authors of distinguished name."

Dr Gonzalez Crespo, after speaking of the other Spanish academies of antiquity, passed on to those of more modern times. In the course of his observations, he made the following remarks:—"That which most ennobles the Spaniards is—that, while Spain was burning with the bloody and disastrous wars which raged between the Moors and the Christians for six successive centuries, she arose above the rest of Europe in intelligence,—became learned and civilised during war, whilst other nations remained ignorant and stupid in peace—a remarkable and honourable distinction which envy *never* can obscure—which destroys the shameful calumnies of foreigners, and demonstrates how unjustly Pedro Regis, the commentator on the works of the Italian Malpighi, applies to our Spain, the opinion and the censure of that distinguished philosopher, relative to the countries who had no scientific academies, and whom, doubtless, he considered barbarous."

The history of the literary and scientific institutions of England, France, Italy, Sardinia, Austria, Germany, Switzerland, Holland, Belgium, Denmark, Sweden, Prussia, and Russia were briefly sketched. The last part of the discourse was upon the academies of Spain and Portugal. We shall confine our report to what was said of the three chief medical institutions of the former country. The Royal Medical Academy of Madrid, (*La Real Academia Medica Matritense,*) a body which acquired a brilliant reputation throughout the whole literary world, and to which suc-

cessively belonged the most eminent physicians and naturalists of the former and present age, was founded by Philip V., who, by a royal ordinance conceded to it his sovereign protection, which was continued to it by his successor in the crown. It consisted of three classes of members,—viz., "*numerarios*," "*supernumerarios*," "*asociados*," and "*correspondientes*."[1] Of the first class there were thirty-five individuals professing medicine, surgery, pharmacy, and the natural sciences,—so that all the departments of the healing art, and its auxiliary branches were represented in the body. It would be difficult to enumerate the important services which it bestowed, and the valuable labours which it accomplished, during about a hundred years, in every thing regarding medicine, surgery, pharmacy, natural history, the review of Spanish and foreign works, commissions of public health, and answers to questions proposed by the authorities. Its members ever laboured with ardour and perseverance, making sacrifice of individual interests, and doing all for the good and happiness of their fellows. They also published in their Transactions, (*Memorias de la Real Academia Medica de Madrid*), medico-barometrical tables, a most interesting application of meteorology to medicine, and many others of remarkable merit, which I, one of its least talented members, revised, in fulfilment of the delicate trust confided to me by the Academy of arranging its Manuscripts, and Library. The well-earned fame which this body attained—its having counted among its fellows the illustrious native *savans*, professors, and authors, Alcon, Amor, Aréjula, Arias, Ayuda, Ballaño, Bañares, Bonell, Brull, Bueno, Cabanilles, Carbonel, Casal, Cerdan, Cervi, Coll, Fabra, Franseri, Galinsoga, Gomez, Garcia, Gutierrez, Hernandez Morejon, Jauregui, Lagasca, Lentijo, Lopez Mateos, Luque, Luzuriaga, Martinez Robles, Mutis, Neira, Ortega, Pabon, Pedralves, Peña, Piquer, Piguillen, Piñera, Ponce de Leon, Rojas Clemente, Salva, Severo Lopez, Soldevilla, Soria, Torres, Trujillo, Villalva, Villanova, and many others alike eminent, were sufficient reasons for this Academy numbering on its lists the most distinguished philosophers of other nations. But alas! this erudite body, when it had almost numbered a hundred years of glory, and was affording the brightest promise for the future, and had unquestionably reached an era when it would have acquired fresh trophies and laurels in the field of science, suddenly ceased to exist, in the year 1830. In spite of its vigour, one dash of a pen reduced it to nothing, with the same facility that the great grim cloud destroys the brightness of a star, shining in a serene and peaceful evening of summer!

"The Royal Medico-Chirurgical Academy of Cadiz, (*Real Academia Médico-Quirúrgica*), to which medicine is greatly indebted for the perseverance with which it has always contributed to the unfolding and perfecting of its principal branches, was founded in the year 1818.

"From the very first the Academy of Cadiz sustained an active correspondence with the majority of the Spanish and foreign scientific bodies, whence it resulted, that it constantly kept pace with the improvements and discoveries in European science, and at the same time extended its own reputation to the remotest countries of Europe. It will always be considered as the most distinguished honour of its founders and their successors, the mere determination to undertake the arduous task of forming a *universal medical topography*, from which resulted, as the fruit of toils and drudgery, a number of valuable data regarding many localities of different parts of the globe. The lustre of this institution was also increased by the superb collection of anatomical engravings which it possessed, and which, being coloured with wonderful artistical perfection, presented with the greatest exactness all the parts of the human body, with descriptions respectively attached. The Medico-Chirurgical Academy of Cadiz has, without doubt, given a positive impulse to all that pertains to medicine, surgery, and the auxiliary sciences: has caused to revive the love of, and correct taste in the study of natural history, has given to the public, at great sacrifice, numerous and important literary productions, and various anatomical fasciculi, supporting, moreover, for many years, a very learned medical journal.

"The year 1830 is memorable in the history of the medical academies of Spain; for it was then that some disappeared, and others came in their place under the name of academies of medicine and surgery. These institutions were established in Madrid,

[1] That is—*ordinary*, *supernumerary*, *associate*, and *corresponding* members.

at Valladolid, Saragossa, Barcelona, Valencia, Granada, Seville, Cadiz, Santiago, and the islands of Minorca and Majorca. During the eleven years which have since elapsed, they have completely fulfilled the ends for which they were founded by Ferdinand VII. This academy has specially occupied itself with inquiries at the instance of the government. During the prevalence of cholera, we had many extraordinary meetings, when the nature of contagious and epidemic diseases was discussed; the regulations regarding the medical police of Madrid, which were drawn up by me, and after having been read to you, were approved of; I have the satisfaction to know I have been instrumental in rectifying many abuses which had come down to us from remote times, but were a disgrace to civilization.

"This academy, however, has devoted the most precious part of the time of its sessions to the consideration of the police of the faculty, and has specially devoted itself to prevent the intrusion of improper persons into the profession. It is melancholy to think of the frightful confusion into which the most difficult of the sciences, and the most noble of the professions has been brought in Spain by the number of *intrusions* which have taken place; an anarchy which has degraded it to the utmost, and which will positively be its ruin if decided measures be not immediately adopted. The sole remedy for the evil consists in closing the schools of medicine against all who have not a sufficient preliminary education in humanity and philosophy, and who are destitute of the requisite aptitude for studying the sciences."

ACADEMY OF MEDICINE AND SURGERY OF BARCELONA.

January 3, 1842.

1. *Cataract.*—Dr Pedro Vieta read a paper upon cataract, which he considered as a *symptom* of many and distinct morbid states of the crystalline lens, and not as the death of it. He described the different methods of operating.

2. *Report.*—Dr Navarra, the secretary, read an account of the proceedings of the academy during the past year. He began by giving an account of the diseases which had prevailed; and then recapitulated the proceedings of the committees of health and hygiène, medical police, forensic medicine, gratuitous vaccination, topography, and mineral waters. He stated that only one memoir had been presented for the prize competition, which was not deemed of sufficient merit to receive the reward. The name of the deceased, and then of the new members were announced.

3. Drs Garcés and Castells, who had attended as a deputation, the third congress of Italian *savans*, held at Florence in September last, gave an account of what was done on that occasion.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Wednesday, 6th April.

DR MACLAGAN, President, in the chair.

1. * Mr Goodsir submitted to the Society the result of his researches into the structure of the healthy human kidney, and into the changes which it undergoes in the granular degeneration described by Dr Bright. Without denying the existence of occasional blind extremities of the tubuli uriniferi, the result probably of arrested development, the author stated that he had never seen the ducts terminating in this way. He then described a structure, which appears hitherto to have been overlooked by anatomists, namely, a fibro-cellular framework, which pervading every part of the gland, and particularly its cortical portion, performs the same important part in the kidney, which the capsule of Glisson does in the liver, forming a basis of support to the delicate structure of the gland, conducting the blood-vessels through the organ, and forming small chambers in the cortical portion, in each of which a single ultimate coil or loop of the uriniferous ducts is lodged. Mr Goodsir believes, that the urine is formed at first within the so-called epithelium cells of the ducts, and that these burst, dissolve, and throw out their contents, and are succeeded by others which perform the same functions. The urine of man has not been detected by the author within the cells which line the ducts, but he has submitted to the Royal Society of Edinburgh, within the last few weeks, a memoir, in which he has proved that the

* This Abstract is furnished by Mr Goodsir.

urine, bile, milk, as well as the other more important secretions in the lower animals, are formed within the nucleated cells of the gland ducts. He believes, therefore, that the urine of man is poured at first into the cavities of the nucleated cells of the human kidney.

In proceeding to describe the morbid changes which he had detected in kidneys, in the various stages of the granular disease of Bright, the author of the paper did not pretend to decide, whether these changes originated in inflammation, or simply in congestion of the gland. He reminded the Society of those changes, which at a former meeting he had announced as occurring in the vesicular glands of the intestine during fever, namely, the formation and progressive increase of nucleated cells, (probably aberrant forms of the epithelium which line the vesicles,) within the vesicles of the patches. He now stated, that granular degeneration of the kidney was a similar decrease; that it consisted essentially of the formation of nucleated cells within the uriniferous ducts; that these new cells were principally confined to the ultimate loops of the duct; but that in advanced stages of the disease, they might be formed even in the tubes of the pyramids of Ferrien,—that when a single ultimate loop of the uriniferous ducts was gorged or distended with the increasing mass of germinating cells, or when two or more neighbouring loops were in this condition, the little mass constituted one of the granulations characteristic of the milder forms of the disease,—that when throughout the gland, or in certain portions of it, the germinating masses had so far distended the ducts and loops, as to cause their disappearance, and to induce absorption of the walls of the little chambers of the fibro-cellular capsule, and consequently of the uriniferous ducts, the whole of the cortical portion of the gland, or that part of it more particularly affected, assumed the appearance presented in the more advanced stages of the disease. If the patient survives the stage last described, the kidney becomes partially or wholly atrophied,—a change due to the contraction of fibrous tissue, produced either from the cells which constitute the disease, or from cells resulting from effused fibrin. With the exception of the primary engorgement of the capillary system, and of the Malpighian corpuscules, and their subsequent diminution, Mr Goodsir had not observed any very marked change in the vascular system of the kidney during granular degeneration of the organ.

In proceeding to describe certain parts of the healthy and morbid structure of the human liver, the author observed, that very little remained to be done in reference to this gland, since the very admirable researches of Mr Kiernan. In regard to two parts of the structure, however, we were yet quite in the dark, namely, the mode of termination of the hepatic ducts, and the connection between them and the nucleated cells of this organ. He had been able, after considerable difficulty, to verify Mr Kiernan's supposition, that the hepatic ducts terminate by a net-work within the lobules of the liver, around the intra-lobular veins. But the most important feature in the observations of the author, was the detection of the real connection between these ultimate ducts and the nucleated cells. These he found to be grouped in the form of acini on the sides of the duct. Each acinus might consist, first, of a single cell, denominated by the author the *primary* or *germinal cell* of the future acinus; or, secondly, of two or more cells enclosed in the primary cell, and produced from its nucleus. The enclosed cells he denominates the secondary cells of the acinus; and in the cavities of these, between their nuclei and cell-walls, the bile and a few oil-like globules are contained, as he had already stated in the memoir above alluded to. The primary cell, with its included group of cells, each full of bile, is appended to the side of the remote ducts, and, consequently, does not communicate with that duct, a diaphragm formed by a portion of the primary cell-wall stretching across the pedicle. When the bile in the group of included cells is fully elaborated, the diaphragm dissolves or gives way, the cells burst, and the bile flows along the ducts; the acinus disappearing, and making room for a neighbouring acinus, which has in the mean time been advancing in a similar manner. The whole parenchyma of the liver, then, is, according to Mr Goodsir, "in a constant state of change,—of development, maturity, and atrophy; this series of changes being directly proportioned to the profuseness of the secretion of bile." The author now stated, that he found himself anticipated by Mr Bowman, in regard to one of the morbid conditions of the human liver, namely, the fatty liver. He had, however, much pleasure in confirming that gentleman's observation (*Lancet*, Jan.

1842) as to the fat being deposited within the nucleated cells of the organ, and to be considered, in fact, as a redundancy of the oil globules naturally existing in these cells. It was then stated, that as in the kidney, so in the liver contractile fibrous tissue might be developed, and produce partial or complete atrophy. Dr Carswell had already indicated this as existing in cirrhosis. The matter of which the rounded masses in cirrhosis consist, was not considered by Mr Goodsir as a new deposit, but merely as the natural tissue of the liver, altered by the pressure exerted by their fibrous envelopes. These alterations consist in constriction, more or less powerful, of the vessels and ducts which pass out and in to the rounded mass; the necessary difficulty with which the circulation is carried on, and the bile advanced along the ducts; and, latterly, in a change in the constitution of the nucleated cells themselves, which, instead of being distended with bile containing oil-like globules, contains matter of a darker colour and less oil. The cells may at last contain matter perfectly black, and then the rounded mass assumes the appearance of a melanotic tubercle, the black cells in some instances becoming pyriform and caudate. The author did not state the exact nature of the proximate cause of these various changes in the liver, although he is inclined to believe that the forms of cirrhosis and melanosis are due to the contractile tissue, as a product of inflammatory action more or less acute. The action of remedies, particularly of mercury, would appear to corroborate this opinion. Finally, he concluded, from the observations which he had made on the morbid anatomy of the human liver and kidney, that certain of the diseases of these organs are due to the development of new cells and new matter, within the ducts and nucleated cells of the organs, in accordance with the normal laws of cellular development, this cellular vegetation at last destroying, more or less completely, the natural tissue of the organ.

2. The secretary read a communication from James Allan, M.D., Haslar Hospital, containing an account of two cases of hemorrhagic diathesis. Dr Allan's cases will appear in full in our next Number.

3. Dr Spittal read an account of a case of suicide, in which death had resulted from the wounding of a large thyroid vein crossing the neck from the upper part of the left internal jugular, to the lower portion of the same vessel on the right side. The fatal wound was effected by a common earthenware jug, which had been broken in pieces for the purpose. Hemorrhage to a large amount had taken place. The party laboured to a slight extent under delirium tremens. The paper of Dr Spittal will appear in our next.

4. Mr Spence exhibited the preparation and drawings of a dissection of the eighth pair of nerves, showing that all the filaments of the par vagum did not pass through the ganglia on that nerve; but that a portion of the vagus could be traced passing over its superior ganglion, and that this portion, after having been joined by the internal root of the spinal accessory, and giving off the pharyngeal branches of the vagus, likewise passed over its second ganglion, and could be traced into the recurrent laryngeal nerve. Mr S. remarked, that this anatomical arrangement of the nerve satisfactorily accounted for the seemingly anomalous fact, that the vagus, an apparently ganglionic nerve, should send off motor branches, as these dissections showed that it contained motor filaments distinct from the ganglionic portion, and also distinct, for some distance, from the superior filaments of the accessory described by Bendz. He then made some remarks on the experiments of M. Bischoff, Dr J. Reid, and M. Longet of Paris, to show that these experiments and the anatomy mutually illustrated each other.

ABSTRACT OF MR GOODSIR'S PAPER ON THE ULTIMATE SECRETING STRUCTURE, AND ON THE LAWS OF ITS FUNCTION.[1]

Read at the Royal Society of Edinburgh on the 30th March.

After referring to the labours of those anatomists who had verified Malpighi's doctrine of the follicular nature of gland ducts, the author alluded to Parkinje's hypo-

[1] The Report of this Society we are unable to give in continuation of that in a former number, but we hope to do so in our next.

thesis of the secreting function of the nucleated corpuscles which line these ducts. In a rapid sketch of the results of inquiries since the appearance of Müller's work "De Penitiore Structura Glandularum," and more particularly of the observations of Henle and others on the closed vesicles which are situated at the extremities of certain ducts, Mr Goodsir stated, that no anatomist had hitherto "proved that secretion takes place within the primitive nucleated cell itself, or had pointed out the intimate nature of the changes which go on in a secreting organ during the performance of its function."

Numerous examples were now given of secretions detected in the cavities of nucleated cells of various glands and secreting surfaces. Among these secretions were the ink of the cephalopoda and the purple of *janthina* and *aplysia;* bile in an extensive series selected from the principal divisions of the animal kingdom; urine in the mollusk; milk, &c.

The wall is believed by the author to be the part of the cell engaged in the process of secretion. The cavity contains the secreted substance, and the nucleus is the reproductive organ of the cell. A primitive cell engaged in secretion is denominated, by the author, a primary secreting cell; and each cell of this kind is endowed with its own peculiar property, according to the organ in which it is situated. The discovery of the secreting agency of the primitive cell does not remove the principal mystery in which the function has always been involved; but the general fact that the primitive cell is the ultimate secreting structure, is of great value in physiological science, inasmuch as it connects secretion with growth as functions regulated by the same laws, and explains one of the greatest difficulties in physiology, viz. why a secretion flows from the free surface only of a secreting membrane—*the secretion exists only on the free surface inclosed in the ripe cells which constitute that surface.*

The author then proceeded to the consideration of the origin, the development, and the disappearance of the primary secreting cell, a subject which necessarily involved the description of the various minute arrangements of glands, and other secreting organs. After describing the changes which occur in the testicle of the *squalus cornubicus*, when the organ is in a state of functional activity, and in the liver of *carcinus mœnas*, it was stated that these were selected as examples of two orders of glands, denominated by the author vesicular and follicular. The changes which occur in the first order of glands consist in the formation and disappearance of closed vesicles or acini. Each acinus might be first a single cell, denominated by the author the *primary* or *germinal* cell; or, secondly, of two or more cells enclosed in the primary cell, and produced from its nucleus. The enclosed cells he denominates the secondary cells of the acinus, and in the cavities of these, between their nuclei and cell walls, the peculiar secretion of the gland is contained. The primary cell, with its included group of cells, each full of secretion, is appended to the extremity of one of the terminal ducts, and consequently does not communicate with that duct, a diaphragm formed by a portion of the primary cell wall stretching across the pedicle. When the secretion in the group of included cells is fully elaborated, the diaphragm dissolves or gives way, the cells burst, and the secretion flows along the ducts, the acinus disappearing, and making room for a neighbouring acinus, which has in the mean time been advancing in a similar manner. The whole parenchyma of glands of this order is thus, according to Mr Goodsir, in a constant state of change —of development, maturity, and atrophy, this series of changes being directly proportional to the profuseness of the secretion.

In the second order of glands, the follicular, as exemplified in the liver of *carcinus*, the germinal cell or spot is situated at the blind extremity of the follicle, and the secreting cells, as they advance along the follicle, become distended with their peculiar secretion.

Among other general conclusions deducible from these observations, it appeared that ducts are to be considered as inter-cellular passages into which the secretions formed by cells are cast.

Finally, the author inferred from the whole inquiry, 1st, That secretion is a function of, and takes place within the nucleated cell; and, 2d, Growth and secretion are identical,—the same process under different circumstances.

MISCELLANEOUS MEDICAL NEWS.

TESTIMONIAL TO PROFESSOR REID OF ST ANDREWS.

(*Abridged from the Fifeshire Journal of March* 31.)

On Saturday morning, a public breakfast was given to Dr Reid in the Black Bull Inn, by the gentlemen attending his physiological class, when an elegant silver pitcher was presented to him in testimony of respect and gratitude for his lectures. About seventy gentlemen sat down to breakfast—W. F. Ireland, Esq., of the Eastern Bank, in the chair; supported by Dr Reid, Professors Gillespie, Alexander, and Jackson, &c.

After thanks had been returned, the chairman rose and shortly stated the object of the meeting.

Mr Sellar, having been called upon by the chairman, expressed his regret that the class had not devolved the task of communicating their views and feelings to some of the more able and experienced. Having taken a glance of the history of the university, he alluded to Dr Reid, who promised to be second to none of his illustrious predecessors. "You are aware, Mr Chairman, that Professor Reid entered on a course of lectures this session on comparative anatomy and general physiology, and threw open the doors of his class-room to all the inhabitants of St Andrews; and so choked was the class-room, that the poor defenceless skeleton was envied its room, and often disturbed in its quiet quarters, and, in spite of all its 'grisly grins,' was sent rattling hither and thither in search of a resting-place. To many of us this department of science was new—to all it has been rendered exceedingly interesting and useful. Thanks to our respected Professor, there has been produced in all who have enjoyed his prelections, a deep and fondly-cherished relish for a rich, necessary, but too much neglected department of knowledge. It certainly could not fail to strike any one who has had the pleasure of hearing him, that in his clear, masterly, and strictly inductive method of investigating and explaining the phenomena and doctrines of physiology, he bears a most intimate resemblance to his illustrious namesake in the analysis of mind. At the end of each lecture, we found, that instead of having been involved in a mental scramble, and bewildered in a whirl of vague ideas, we had, by the reasonings and illustrations of our teacher, and by the aid of his admirable collection of diagrams, specimens, and preparations, with which he made everything bear on our minds with all the pressure and intensity of palpable facts, found that we had made a sure advance, and felt able and anxious to take another step. Our feelings towards him are not merely those of persons gratified, but benefited. He has instructed us in a branch of science intimately connected with the wants and enjoyments of our species, which enables us to avoid those modes of life which do violence to the intentions of the Creator, and which exalts our conceptions of infinite wisdom, power, and goodness—the ultimate end of all sound philosophy, or it fails of its noblest aim." Here Mr Sellar argued at some length, for the introduction of physiology as a branch of national education; and continued—"It is not to this memorial in itself that Professor Reid will look: he will look over the sign to the thing signified—to the feelings which prompted it. Sir, I have been deputed by those attending your class, to express their high opinion of your talents and worth—their sense of the indefatigable zeal you have displayed, and their sincere and unanimous thanks. Sir, thanks is a vague term; it is found on every one's tongue, and at the point of every one's pen; but we, as a class, have been feeling ours drawn forth so intensely, that we have been almost wishing they had been visible and tangible. Indeed, we have actually attempted an embodiment of them; and, if you will allow me, here it is." Here Mr Sellar produced the testimonial, and concluded amid loud and continued applause.

Dr Reid then returned thanks; and, after several speeches from the other Professors, &c., and three hearty cheers for Dr Reid, the company separated.

UNIVERSITY OF EDINBURGH.—TOWN COUNCIL PROCEEDINGS.

There was laid on the table a report from the College Committee on the propriety of altering the regulations which require attendance at University classes exclusively, as

qualifying candidates for the degree of M.D. In accordance with the suggestion of the Joint Committee of the Fellows of the Colleges of Physicians and Surgeons, and some of the medical and surgical professors of the University, the College Committee recommend that candidates for medical degrees should be allowed to take four out of the fourteen imperative classes under extra-academical lecturers. With respect to the question as to who should be recognised as the teachers whose instructions should qualify candidates for degrees, equally with those of the professors of the University, the Committee think that the proposition of the Medical and Surgical Professors in the University and of the Royal Colleges of Physicians and Surgeons relative to medical education, agreed to in March 1839, with a view to a general legislative enactment, might be accommodated to meet the present exigencies of the University.

The report then goes on to say:—

"That a fund should be provided for retiring allowances; that a considerable portion of the bequest of General Reid should be devoted to this purpose; and that, in addition to this, each professor should pay into a common fund a small per centage from the amount of his class fees and salary. That this per centage should, upon the calculation of an actuary, be sufficient to provide a retiring allowance equal to a fourth of the annual amount of the professor's income while in actual service; and another fourth should be added from the Reid Fund, so as to provide a retiring allowance equal to half the annual income whilst actively engaged. One advantage of this arrangement would be, that it would ascertain what allowance any one was entitled to receive upon retiring, as it could be accurately calculated by the previous annual income, and the premium arising from the per centage."

The report was ordered to lie on the table for a fortnight.

EDINBURGH SCHOOL OF MEDICINE.

In our number for May of last year, we took the liberty of making some remarks upon the constitution of the "Extra-Academical School of Medicine" in Edinburgh, especially intended to point out that the whole body of medical lecturers without the University, were not included in the name of "Queen's College," and that the confounding of the two terms at the distribution of the prizes of that body, was improper. This we thought it right, from the misconceptions which had arisen, broadly to announce—and at the same time, to urge the union of all the talented and honourable extra-academical lecturers with which Edinburgh is adorned, in one society. The obnoxious name being now happily abandoned, one of the chief difficulties is removed. With common objects and interests, "what no one teacher," we said, in the paper referred to, "could do singly, many united might easily accomplish, thereby materially contributing to the advantage of themselves and their pupils. We allude particularly to the formation of a select library of standard works, and a uniform system of certificates. Some might also wish for a museum in connection with the association; and if preparations suitable for teaching could not be had from the Museum of the College of Surgeons, then the formation of one would be another object most desirable to accomplish. To form such a society or association, however, of teachers, it is obvious that community and reciprocity of principle are indispensable."

We think that from recent events we may hope that a union will be formed and consolidated before the meeting of another winter session. One great step in advance was the official list of authorized lecturers published last November by the College of Surgeons of Edinburgh, when all contained in it were distinctly seen to be on the same footing; and a second step is, the publication of a common prize list, by the lecturers themselves, within the last few days. The advertisement in the newspapers, (from which we copy the subjoined list,) is headed, "MEDICAL SCHOOL OF EDINBURGH," but being great sticklers for accuracy, we have ventured to prefix the word "Extra-Academical," lest otherwise it might seem to be a complete prize-list of the Medical School of Edinburgh, or induce English and Irish readers to suppose that it gave a correct view of the strength of the whole school, whereas it does not even contain all the Extra-Academical Classes, and not one of those within the University.

PRIZE LIST OF THE EXTRA-ACADEMICAL SCHOOL OF MEDICINE, EDINBURGH.

The following prizes were awarded at the close of the winter session, 1841-2:—NATURAL PHILOSOPHY.—Mr LEES' CLASS. Mr John Goodall. CHEMISTRY.—Dr WILSON'S CLASS. Mr C. A. Robertson. ANATOMY.—Dr KNOX'S CLASS. *Junior.* Mr Henry Douglas. *Senior.* Mr Robert Lord. Dr MERCER'S CLASS. *Junior.* Mr Fr. Renaud. *Senior.* Mr F. Renaud. PRACTICAL ANATOMY.—Mr D. P. M'Lean; Mr S. D. Wells. Dr A. THOMSON'S CLASS. *Junior.* Mr James Heron;* Mr George W. Lillies.* *Senior.* Mr Vansomeren;* Mr J. Struthers.* *Anatomical Demonstrations.* Mr G. W. Lillies. MATERIA MEDICA.—Dr SELLER'S CLASS. Mr William Reid. Dr MACLAGAN'S CLASS. Mr John G. Sandie. PRACTICE OF PHYSIC.—Dr WOOD'S CLASS. Mr Llewylen Bland. SURGERY.—Dr J. ARGYLL ROBERTSON'S CLASS. Mr John G. Buchanan. Mr MILLER'S CLASS. Mr George Smith. *For Essays.* Mr G. Smith;* Mr Walter Simpson.* Dr HANDYSIDE'S CLASS. Mr Samuel Edwards. MIDWIFERY.—Dr MARR'S CLASS. Mr George Irons. FORENSIC MEDICINE.—Mr SKAE'S CLASS. Mr William M. Fraser. GOLD MEDAL, for eminence in all the branches of study, Mr Jos. B. Collings.

EDINBURGH, April 16, 1842.

Those marked thus * being equal, an extra prize was given.

WESTMINSTER HOSPITAL.—On Wednesday the 23d instant, the Westminster Hospital Medical Society held their last sessional meeting, Dr Basham in the chair, when the essay prize was awarded to W. T. Kay, Esq., for an original thesis on the Anatomy and Physiology of the Liver. A testimonial was presented to Mr Williamson, vice-president, on his retiring from office, by the Society, and an oration delivered by Mr Williamson, on the past and future prospects of the Society, in the presence of a number of influential governors and lecturers of the Hospital. The business of the evening was concluded by the announcement of an annual prize of the value of five guineas, from Anthony White, senior surgeon to the Hospital, and vice-president of the Royal College of Surgeons; and another of equal value, by the lecturers of the School. This Society is open to members of all the medical schools of London.

SOCIETY FOR RELIEF TO WIDOWS AND ORPHANS OF MEDICAL MEN.—A half-yearly general court of the members of this Society, was held on Wednesday, at the Gray's Inn Coffee-House, Sir Charles M. Clarke, bart., vice-president, in the chair. It appeared from the auditor's report, that the sum of L.632 had been granted for the past half year, to thirty-one widows, and fourteen of deceased members, and that L.100 had been funded. Certain resolutions of former courts, regulating the amount of subscriptions by the age of members, were finally confirmed, and other resolutions for the registration of the Society, agreeably to the provisions of the Acts of Parliament for regulating friendly societies, were, after some discussion, carried unanimously. By this proceeding, the Society will obtain the privilege of arbitration in cases of dispute, and of investing its funds, upwards of L.42,000 stock, with the Commissioners for the Reduction of the National Debt. We beg to call attention to the advertisement of the annual dinner of this Society, to take place on Saturday the 9th of April; His Royal Highness the Duke of Cambridge in the chair. Dr Bowring has succeeded in making the absurd quarantine laws the subject of further Government investigation. We are glad of this step being gained, for knowledge is really all that is wanted to secure them a thorough revision.

UNIVERSITY OF NEW YORK.—We are glad to see that the medical department of this rising University has assumed an aspect of great strength and importance. It embraces the highly respectable names of Theodore Frelinghuysen Valentine Mott, Granville Sharp Pattison, J. Revere, Martyn Paine, G. Bedford, J. W. Draper, &c. &c. We wish it every success.—*Med.-Chir. Rev.*, April 1842.

UNIVERSITY OF LONDON. RESIGNATION OF DR ROGET.—A reduction having been made in the salaries, Dr Roget has resigned, conceiving that L.100 a-year is very inadequate remuneration!

MADRID ACADEMY FOR PROMOTING EMULATION IN THE MEDICAL SCIENCES. PRIZE ESSAY.—The above-named Academy have announced as the subject of a prize essay, —"*The influence which medicine ought to have, and is capable of having upon civilization, and the happiness of communities.*" The competition is open to all excepting members; and the essays (which are to be written in Spanish or Latin,) must be given in on or before the 31st of October 1843. The prize is a gold medal, and the title of member.

STATISTICS OF THE RECEPTIONS INTO THE DIFFERENT MEDICAL FACULTIES IN FRANCE DURING 1837—1841 INCLUSIVE.

	Years.	Paris.	Montpellier.	Strasburgh.	Total.
Officers of Health.	1837	174	144	30	348
	1838	189	163	29	382
	1839	169	143	23	335
	1840	124	146	53	323
Doctors in Medicine.	1837	487	175	23	679
	1838	376	186	23	585
	1839	431	162	16	612
	1840	385	150	28	563
	1841 (Nov. 16,)	284	109	19	412

PATHOLOGICAL SOCIETY FOR THE MIDLAND COUNTIES.—Some medical gentlemen of Birmingham have formed a Society under this name, with rules not dissimilar to those of the London Medical Society. B. Fletcher, M.D., and D. W. Crompton, Esq., are elected Secretaries for 1842.—*Medical Times.*

DISPENSARY AT CAIRO.—A physician of Cairo, with the consent of Mehemet Ali, has opened a dispensary for the indigent and sick. It is the first ever established in Egypt.—*Medical Times.*

MICROSCOPE FOR MEDICAL MEN.—At the sitting of the Academy of Sciences, Paris, on the 29th of March 1841, a new microscope was presented by Dr A. Donné, which is specially adapted for medical men, to enable them to examine immediately, and at the bedside of their patients, the nature of a substance, or of a morbid product, which it may be interesting to know. It is in fact a pocket microscope, with nothing peculiar about it, only it is contrived, so as by its simplicity and cheapness, to extend the use of this instrument in medical investigations. It is proposed by the contriver of this pocket instrument, to render the microscope as useful in the observation of disease as it has been latterly rendered in the study of natural history and physiology. Within the last fifteen years, many distinguished French physicians have applied the microscope in the detection of disease, and in studying its character; and any adaptation of the instrument to that purpose like that of Dr Donné, may be the means of extending the application of it in medicine. As soon as the construction of the instrument is known, it will be inserted.—*Microscopic Journal.*

OBITUARY.

At Kirkee, in the Presidency of Bombay, on the 16th of January, P. H. Lavens, Esq., surgeon, 14th Light Dragoons, of typhoid fever, after a short illness.

Lately, staff-surgeon, Dr Anglin.

Lately, staff-surgeon, Dr D. Wood.

Lately, L. Gillespie, Esq., surgeon, R.N.

Lately, Justin M'Carthy, Esq., surgeon, R.N.

On the 1st March, at Dorchester, H. Plowman, Esq., surgeon, R.N., aged 63.

Lately, Ralph Elliott, Esq., surgeon, R.N.

Lately, Thomas Kidd, Esq., surgeon, R.N.

Lately, Charles Newman, Esq., assistant-surgeon, R.N.

Lately, H. A. Baker, Esq., assistant-surgeon, R.N.

Lately, J. Thomas, Esq., assistant-surgeon, R.N.

Lately, C. R. Schumacher, Esq., assistant-surgeon, R.N.
Lately, Alexander Scott, Esq., assistant-surgeon, R.N.
Lately, James Macleur, Esq., assistant-surgeon, R.N.
Lately, John Tait, Esq., assistant-surgeon, R.N.
Lately, R. W. Martin, Esq., assistant-surgeon, R.N.
Lately, William Craig, Esq., assistant-surgeon, R.N.

At George Town, Demerara, Ewen Maclauren Smith, M.D.

At his residence in York Street, Portman Square, Sir W. Beatty, M.D., F.R.S., late physician to Her Majesty's Fleet and to Greenwich Hospital. He attended Nelson at his last moments; and was a most estimable man.

On the 13th March, Matthew Chalmers, M.D., senior-physician to the Hull General Infirmary.

On the 23d February, at York Buildings, Regent's Park, in his 69th year, David Wood, M.D., late staff-surgeon to the forces.

On the 17th April, Wm. Stafford, M.D., late of Newark-on-Trent.

Professor M. Muller of Gottingen died recently at Athens, of a fever caught whilst exploring the remains of Delphi.

On the 1st February, Dr Yelloly, physician to the Norfolk and Norwich Hospital.

At Dollar, Clackmannanshire, on 22d March, Henry Arnott, Esq., surgeon, H.E.I.C.S.

At Bath, aged 69, Sir John Meade, K.H., late inspector-general of hospitals.

At Tongue, Sutherlandshire, John Richardson, Esq., surgeon.

At Stepney, near London, Thomas Johnston, Esq., surgeon.

At Kintore, Robert Cooper, Esq., surgeon.

BOOKS RECEIVED.

1. A Dispensatory, or Commentary on the Pharmacopœias of Great Britain; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the articles of the Materia Medica. By Robert Christison, M.D., F.R.S.E., Professor of Materia Medica in the University of Edinburgh. 8vo. pp. 978. Edinburgh: A. & C. Black, 1842.

We believe that this is the most accurate, the best arranged, and the cheapest work of the kind which has ever issued from the press. In another Number we may notice it more in detail. In the mean time, we recommend every practioner to place it on his library table.

2. Guy's Hospital Reports. No. XIV. April 1842. Edited by George H. Barlow, M.A. and M.D., Trin. Coll. Cam., and James P. Babington, M.A., Trin. Coll. Cam. 8vo. pp. . London, Highley, 1842.

The writers in this number are Dr Barlow, Mr A. S. Taylor, Mr Lever, Mr T. W. King, Mr E. Cock, Dr Golding Bird, Dr H. Marshall Hughes, Mr C. Aston Key, Mr J. F. France, and Dr B. G. Babington. Most of their papers will be noticed in our two next Numbers.

NOTICES TO CORRESPONDENTS.

Some letters have been mislaid. Should any of our correspondents have received no answers to their communications, we beg that they will write again.

In our next, the papers by Mr Renaud, and Dr James J. Ross.

ERRATUM.

In our review of Dr Willis' book on the Treatment of Stone in the Bladder, we erroneously stated that it was bicarbonate of potash which exists in the waters of Vichy. It is bicarbonate of soda.

FIG. 2.

FIG. 1.

FIG. 5.

THE

LONDON AND EDINBURGH

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OF

Medical Science.

JUNE 1.] No. VI. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on the Structure and Nature of the Corpora Lutea; with a Case in which one of those Bodies was found existing in an Ovary connected with the Virgin Uterus of a Sheep.* *By* FRANK RENAUD, Esq., *Member of the Royal Medical Society of Edinburgh.*

THE corpora lutea, as found existing in the ovaria, have always received some share of attention in works treating expressly of forensic medicine, because their presence or absence affords important criteria in many medico-legal investigations. But, notwithstanding the unequivocal evidence professional men have preferred on detecting one of these bodies in the human female, there yet remain many structural appearances, which have hitherto either escaped observation, or remained confined to private individuals; whereas several conflicting statements as to the precise nature of these parts, are to be found interspersed amongst the writings of modern authors. For this reason, an attempt at giving a definition, based on dissections, and multiplied observations, cannot be unprofitable. In order to accomplish this end in an efficient manner, it appears a preferable proceeding to trace these

bodies from their first cause, rather than view them as already existing.

Considered in its ultimate definition, the corpus luteum is a Graafian vesicle, and a Graafian vesicle is simply the receptacle for the nucleus of a cell which is contained within a vesicle or parent cell.

Viewed according to the received tenets of descriptive anatomy, the parts constituting the ovary and Graafian vesicle will be defined as one and indivisible: viewed physiologically, the ovarium must be understood as the real and primitive body, whereas the formation of a Graafian vesicle, and its peculiar contents and ultimate products, have no more claim to be accounted as integral principles of the ovary than the seminal ingredients of the male, to be component principles in the structure of the testicle. Within the coverings or cavity of a Graafian vesicle, a variety of changes occur affecting the ovum, in which the ovary only participates, inasmuch as it affords a nidus within which these alterations may be carried out with safety and efficiency.

Whilst during the early periods of life the ovaries present a universally smooth surface, at the period of puberty a striking alteration is observed, by the protrusion of a greater or less number of vesicular bodies, projecting at different degrees of elevation, according to the relative state of advancement in each. These are the Graafian vesicles already mentioned, which possess distinctly two separate tunics, the outer one being vascular, the inner ranking amongst the non-vascular tissues. The knowledge of these bodies becoming more turgid and vascular during the menstrual periods, was first made known by Dr R. Lee. The escape of ova in mammalia differs chiefly from the same process that is known to obtain in birds, in that they are always less structurally perfect in the envelopes. The cavity of the Graafian vesicle in woman may be styled the calyx of the ovum, but it will mostly be found containing, besides the proper ovisac, a moderate share of the granular investing matter of the escaped germ. The cavity, moreover, instead of contracting, becomes enlarged, both centrally and peripherally, occupying not only more of the cavity of the ovary than did the previous vesicle, but jutting or projecting outwards, in the form of a protuberance, which differs in size and appearance in different animals. In the human ovary the projection is very slight, and the corpus luteum, in many instances, is inordinately small; a circumstance which might be accounted for by supposing the Graafian vesicle here to be proportionally smaller than in most other animals of the same natural class, were it not that bodies of a larger size have as frequently, if not more often, been detected.

It would be difficult to state with precision the exact period at which solid matter begins to form within the vascular mem-

brane of the Graafian follicle. The supposition of its being commenced previous to the expulsion of the ovum, is entirely gratuitous, and, moreover, so destitute of explicit facts, that the ingenuity displayed in devising it cannot be held altogether adequate to render the doctrine universally tolerable. The cavity may be filled with blood, a serous straw-coloured fluid, or it may simply contain the granular reliquiæ of the ovum. The effusion of blood is generally prevented by the *modus operandi* of the escape of the ovum, which occasions a thinning and absorption of the parietes of the ovary.

The pale straw-coloured fluid is more generally seen, which partakes of all the characteristics of serum, coagulating slightly on the addition of spirit, and very firmly when a drop of strong muriatic acid is employed. The contradictory statements regarding the nature of the solid matter of which a corpus luteum consists, must have arisen from want of accurate information respecting it, otherwise one class of physiologists would never have pronounced it an effusion of lymph, nor would Von Boer, in contradicting this, have fallen into an error equally great, by announcing it as an hypertrophied condition of the ovisac. Dr Martin Barry supposed it to be made up of blood-corpuscules, greatly enlarged, and originally contained within the vascular network of the Graafian vesicle. The microscopic appearance presented by these bodies varies slightly, as examined from specimens procured from different animals, but they all agree in the fundamental principles. They are neither secretions nor effusions, but true growths, made up of two separate parts—the first being small nucleated cells, common in all parts of the body; the second are cells also, but very much enlarged, floating freely amongst the parts just mentioned, and filled up with small granules. The exact size of these enlarged cells is not constant, nor proportionate to the size of the animal in which they are contained. The corpus luteum of the cow is invariably yellow; an appearance depending on the large cells containing a considerable quantity of oil, which may be separated by boiling the solid parts in ether for some time, or by maceration in the same menstruum, when the solid substance presents the same appearance under the microscope, as in other animals. The oily matter which has escaped from the cells by the processes just stated, is of a clear bright yellow colour, wholly freed from the granules, and floating about in irregularly formed masses. This oily matter is generally most plentiful at the early periods of the formation of these bodies, and therefore accounts for the greater intensity of colour at this stage than in succeeding ones. In the early growths of the corpora lutea in the cow, the vessels ramifying over the vascular membrane are so plentiful, that they give the protruding fungoid-like mass a deep lake tint. When the

yellow matter is fully formed, and the sides of the ovisac are in opposition, these blood-vessels begin to diminish in calibre, and finally they altogether disappear. The knowledge of this fact may in some measure explain their transitory nature, for their longest duration rarely exceeds fifteen months. The purposes served by the corpora lutea are very difficult to ascertain; but, perhaps no better statement can be given in the absence of further facts, than that the escape of a substance having caused a breach in the ovary, the corpus luteum, by filling up the aperture, brings the sides of the cavity into apposition, and thus by contracting the parts, heals the lesion. This purpose being accomplished, the office of the corpus luteum is rendered obsolete, and it now being a body foreign to the original structure, the absorbents remove it. The older a corpus luteum is, the firmer will be its texture. When first formed in the human subject it is red, and continues pinkish during the months of utero-gestation. The same remarks apply equally to the ewe and the sow. The yellowish colour is a subsequent appearance to the red, and may be seen originating at one side of the body, encroaching gradually upon it until the previously existing colour is exchanged for it.

The locality in which the corpus luteum is formed, is so palpably plain to any person who has multiplied dissections, that it need here scarcely arrest attention. The solid matter is interposed invariably between the external or vascular membrane of the Graafian vesicle, and the internal or non-vascular ovisac, which is always more or less thickened, and has a greater or less quantity of granular or other matter internal to it in pure specimens. The structure is decidedly lobular, having a radiated appearance—one of the radii always extending as far as that portion of the ovary whence the ovum originally made its escape. To establish with accuracy the precise structure of one of these bodies, is an inquiry of vital consequence, when medico-legally considered. The ovary, like other parts of the body, is liable to disease. Its vessels frequently become varicose; and apoplexy, as it is termed, forms no uncommon morbid appearance, consisting of an irregular diffuse effusion of blood into the tissues, varying indefinitely as respects size. Tubercles are also found existing in the ovary, as a result and accompaniment, in persons dying of tuberculous diseases. Both these morbid conditions may be mistaken for corpora lutea, on superficial examinations. The following appearances ought, I conceive, to be clearly discernible, previous to any professional evidence being given in a case, whether it be moral, forensic, or physiological: 1st, A distinct external envelope, in contact and in union with the stroma of the ovary, but capable of being dissected away from it entire. 2d, A solid substance, either fleshy-looking, red, pinkish, or yellow coloured, which should be divided into a greater or less num-

ber of segments or lobuli. The deeply-fissured appearance of these lobuli has been insisted upon, but as in a great many instances it is absent, its presence can afford no positive criterion. 3d, An inner membrane, or the proper ovisac thickened. 4th, A central deposition of granular or other matter, or the remains of it. 5th, The microscopic appearance presented will form a very good auxiliary. The fact of one of the radii reaching as far as the surface of the ovary, is an appearance useful as an auxiliary diagnostic indication, but it is equally present in the false as in the true bodies. As until within the last three or four years, the study of embryology, and the collateral parts connected with the reproductive process, has been little understood, and even yet remains very imperfect, the evidence of our older authors in these cases, must be received with a certain share of distrust, seeing they had no precise ideas of the distinctive characteristics on which to found a correct diagnosis, and therefore the specimens adduced by them may have been spurious. As the lower animals can detach ova antecedently to union with the male, and consequently independent of any thrilling excitement produced by the venereal orgasm; so, it is equally within the pale of possibility, to conceive that bodies of like nature may escape casually under circumstances of peculiar or diseased excitement, producing and continuing venereal appetency. But the reverse of this is the generally received—it may be said, the standard opinion. Dr Montgomery, after the most extensive experiments and elaborate investigations, sums up by saying, that conception never happens without the production of a corpus luteum, and that the corpus luteum is never found in virgin animals, but is the effect of impregnation. Such a statement as this, given so positively, from a man of Dr Montgomery's standing in the profession, is sufficient to induce most men to rely on its undeviating accuracy, and their testimony will be given in accordance with it.

But the entire applicability of such a doctrine as this, to all cases indiscriminately, may perhaps be far from the truth. That impregnation never does occur without our being able to detect one of these bodies, is a fact established to a demonstration; but that this last may, and occasionally does happen, without our being able to discover an embryo, or the elements of one in the Fallopian tubes or uterus, is very far from being equally clear.

In order, if possible, to substantiate the assertion here made, and prove its correctness, I appeal to facts, for which purpose the following case is appended, which is so clear, that it is hoped no fallacy can be supposed to exist either in its dissection or detail. The specimen exists in the ovary on the left side of the uterus of a sheep. Fig. 1 gives an accurate etching of the parts previous to dissection. It is remarkably small, as are also the ovaria on either side. The prominence in the left ovarium points

out the position of the true corpus luteum, whilst the body central to the right ovarium is spurious. The distinct information of the person from whom this preparation was obtained goes to prove that it belonged to a "hog," or a sheep of one year's growth; also, that the uterus was remarkably small, much more so than in the fully-grown animal. Having ascertained, on making a section of the ovary in question, that its greater bulk was occupied with a corpus luteum corresponding in every respect to the description previously given, the uterus was next very carefully opened, with the expectation of finding a very young embryo, but the closest scrutiny exhibited no trace of any such structure; and, furthermore, the cavity of the uterus was not even lined with the ropy mucus, but simply moistened, as is the case in all cavities of viscera, more especially those lined with mucous membranes. Fig. 2 gives a view of the appearance presented on these parts being laid open. Nothing can be clearer than that the left ovary presents a corpus luteum perfect in all its details; and that the opposite body has on its upper surface a body equally spurious. The size of all the figures corresponds exactly to nature.

The cavity of the uterus is completely covered with a deep black lining, except here and there on the summits of a number of round or oval elevations, which are the maternal cotyledons, into which the fœtal tufts penetrate during pregnancy. The black coating is an epithelial superstructure, consisting of two distinct varieties of cells arranged in a peculiar manner. The dark matter is entirely made up of pigmentary globules, which together form a kind of network, in the interspaces of which the simple nucleated cells of Schwann are seen very plentifully. The precise appearance of this epithelium is of consequence, as on it much of the correct diagnosis depends. The fully developed and unimpregnated uterus of the ewe possesses this peculiar lining, although it does not exist in the early months of the sheep's life. Whether it again appears subsequent to pregnancy, I am not prepared to assert, but in the uterus of a cow the corresponding ovary of which contained a true corpus luteum, a small streak of this matter was observed in the left cornu.

Two objections may be offered to this case: 1st, That an early ovum might have been contained in the uterus, but from its diminutive size it may have been overlooked or otherwise lost. The second is, that an abortion might have previously taken place.

Its general size, the epithelial lining, and the fact that the body was opened, not casually, but with the express intention of extracting and examining its contents, are each and every one arguments of a pretty positive description, especially the two first. Again, the corpus luteum, like other true growths, is not the production of a day, nor is it a mere fungous offset. Its superior

surface is at first patulous, next prominent, then ragged and irregular, next healed over and smooth, and, lastly, disappearing externally, to be enclosed within the substance of the ovary, the original aperture being closed by a process of cicatrization. These successive changes must severally have required some brief time for their accomplishment. As the parts present themselves, the inner membrane of the ovum is found thickened; the true matter of the corpus luteum, is firm and fleshy-looking; and the cicatrization externally is complete. Under a very reasonable computation, the full period of one month may be allowed for the due fulfilment of these natural processes, so far as they have already advanced. But perhaps the most satisfactory evidence that can be adduced is a comparison of structures in the same animals, at different periods. Fig. 3 gives an outline of the uterus of a sheep, in the ovaria of which two corpora lutea were discovered, and within the cavity of which two embryos, bearing the date of one month, were found; at least the parts already formed correspond to those found in the human embryo of this date. But in the case of the human embryo the period of pregnancy continues nine solar, or ten lunar months; whereas, the ordinary period of utero-gestation of the ewe is only 20 or 21 weeks, and is seldom prolonged later; therefore, the embryo may be viewed as even younger than one month, but certainly not bearing a later date. The representation of one of them is given by fig. 5, in which letter B indicates the amnion, letter C the umbilical vesicle, letter A the embryo, and letter D the bicorned allantois. In the embryo the three bronchial clefts are already separated; the fourth is still adherent to its fellow. The body is of an elongated serpent-like form so well described by Velpeau, and having the upper and lower extremities pullulating. The heart is a simple looped vessel, projecting from the boat-shaped abdominal cavity in common with the intestine. The Wolffian bodies are still persistent, and the eyes are just constituted. The ears present the appearances of elongated vesicles. Fig. 4 represents this uterus laid open throughout its whole extent, presenting two marked alterations of structure, as compared with Fig. 2. The disappearance of the jet-black epithelium is rapidly taking place, it now remaining only on the summits, and around the superficies of the cotyledons, whereas the whole of the interspaces are of a bright pink colour. Added to this, the adhesion of the pigmentary globules is much diminished, and the entire has an undefined, homogeneous appearance. They are considerably separated from each other by reason of the distension of the uterus, which is also much wider and shorter in this figure than in No. 2. Although it will tend nothing to elucidate the present case, yet it may be observed, that the allantoid

membranes proper to each embryo, along which the umbilical vessels are seen to run, are in union at the cervix uteri. The point of junction is 20, indicated at E.

The discussion of objection second need only be brief. Had abortion taken place, it would have presupposed a foreign body, sufficiently large to act as an irritant to the inner walls of the uterus, within which it had been originally contained as an entity, but from some accident, or other arrest of nutrition, its vitality had ceased, when, acting as a foreign body, its presence was sufficient to excite the stimulus of contraction necessary for its expulsion. Furthermore, some enlargement or relaxation of the uterus would have been a necessary consequence, as also some degree of widening at its cervix. As a strict scrutiny of the parts fails to detect any one of these appearances, it is fair to conclude there had been no previous abortion.

But to conclude, although the present example affords satisfactory evidence of its correctness, and appears calculated to prove that a true corpus luteum may very rarely be found to exist in conjunction with a virgin condition of the uterus, still the case, though conclusive, in as far as the sheep is concerned, is yet not quite so valuable as if it had belonged to the human female. True it is that both belong to the same natural class, *Mammalia*, and the internal physical organization of each differs but trivially; but if it proves beneficial only in teaching the medical jurist to place less implicit confidence in these bodies when unaccompanied by other concomitant symptoms and appearances, his verdict will in future be less positive, and perhaps more philosophical; and though guilt will yet be as easy of detection as heretofore, innocence may sometimes be saved from unmerited punishment.

ARTICLE II.—*Strangulated Inguinal Hernia—Operation—Cure. By* JAMES J. ROSS, M.D., *Surgeon, Cambusmore, Sutherlandshire.*

Neil Mackay, aged twenty-six, of Morness, parish of Rognot, Sutherlandshire, has, for the last six years, been the subject of inguinal hernia of the right side, for which he has regularly worn a truss. Any occasional descent of the bowel during that period he himself has always found easy of reduction, with one exception last year in Glasgow, (where he was employed in a dye-work,) when a surgeon reduced it by the taxis. On the 3d March 1842, however, being invited to a "dance" in his neighbourhood, he incautiously removed his truss, and after drinking a considerable quantity of ale, and dancing a good deal, the bowel

descended, and his attempts to return it were ineffectual. The rupture continued unreduced, and at 2 P.M. of the 5th March I saw him. The tumour then filled the right side of the scrotum; it was of the size of a fist, tense, tender, and somewhat clear on percussion. All the symptoms of strangulation were present: vomiting, obstruction of the bowels, (which had not been moved since the descent,) sunk anxious features; small quick pulse; tenderness of abdomen, which was tense and slightly tympanitic; the tongue was coated and dry. I tried the taxis cautiously for nearly half an hour, but without success; he was then bled to faintness, and the taxis repeated, but still unsuccessfully. I then determined on the operation, and sent to Brora, fourteen miles, for Dr Grant, surgeon there, to come to my assistance. I waited till 12 o'clock at night, when a message arrived that the Doctor, being from home, could not attend. I therefore procured three friends of the patient, two to hold the patient rightly in bed, and the other to hold the candle, and between 12 and 1 of Sunday morning, March 6th, proceeded to operate. A quantity of dark sero-sanguineous fluid escaped on opening the sac, which was found to contain about four inches of small intestine, of a purplish crimson colour, quite firm in texture, and perfectly unadherent. On passing up the forefinger, a stricture was immediately felt, which was divided, till the finger could pass through. Still the gut could not be returned; and on passing the finger farther up, the real stricture was found much deeper, tight, and narrow, just at the internal ring. The bistoury was again used to divide this, when the protruded intestine was easily returned. The wound was then brought together by four stitches, supported by two strips of adhesive plaster, a folded piece of dry lint laid on, and the whole secured by a T bandage. Perfect rest on the back was enjoined, and an ounce of castor oil ordered to be taken, provided the bowels did not act in three hours.

March 6th, 12 o'clock noon.—Bowels acted naturally and copiously about two hours after the operation, and therefore the oil was not taken. He experienced great relief shortly after the operation, but the pulse is 100, small and thready; tongue dry, and slightly brown; abdomen tender on pressure, and the upper lip bound tightly over the teeth, (a symptom remarked by Marshall Hall, and peculiarly characteristic of peritonitis).

R. Calomelanos gr. ij. Pulv. opii gr. ½.—Misce.
Fiat. pil. quaque quarta hora sumenda.
Injiceatur vesp. enema aquae calidæ.

7th. Enema acted well, bringing away an immense quantity of feces; some sleep through the night; much as yesterday; abdomen tender; pulse 110, incompressible.

V. S. ad ℥xij. Cont. pil. cal. et opii.
Warm fomentations to abdomen.

8*th*. Rested well, and is much better to-day; bowels confined; has taken twelve pills as above, but the gums are not affected.

Habt. statim ol. ricini ʒi.

Repetatur enema vespere.

9*th*. Greatly better; pain of abdomen almost gone; pulse 68, soft; tongue moist, and pretty clean; in good spirits. On removing the bandage, the wound looks well. The stitches were removed, and fresh straps, with clean dry lint, applied as before. Bowels not moved since action of enema last night.

R. Sulph. magnes. ʒi. quaque hora donec alvus respond.

11*th*. Took four drachms as above; bowels were moved, and have since been regular; abdomen soft, and not tender on pressure, except just about the ring; pulse natural; sleeps well; surface of wound covered with healthy granulations, and no suppuration from below.

Simple ointment to wound; low diet with perfect rest, and the use of the bed-pan to be continued.

13*th*. Going on favourably, and wound healing; but there is a circumscribed swelling in the inguinal region, a little to the outside of the internal or deep abdominal ring, soft in the centre, hard round the base, and seemingly going to suppurate.

16*th*. Wound healing kindly; bowels regular without medicine; centre of above-mentioned swelling projecting and soft; a lancet was introduced into it, but only a little blood issued.

Continue simple ointment to wound. Poultice the swelling.

19*th*. Yesterday, pus began to flow from the lancet puncture made at last visit; the opening was extended to-day, and a copious discharge of healthy matter took place; wound of operation almost whole.

Continue poultice, and horizontal position.

23*d*. Wound healed; still a little serous oozing from abscess; health good, and bowels regular.

Continue at rest in bed; simple dressing to abscess; a little camphorated mercurial ointment to be daily rubbed over the hardened parts round it.

30*th*. Almost all the induration is gone; a very little watery discharge still from abscess. There being now no tenderness about the inguinal canal, the truss is applied, and the patient allowed to get out of bed, and put on his clothes.

April 4*th*. Abscess closed; the patient is up daily, and is in all respects well.

ARTICLE III.—*Case of Suicide, in which death resulted from a wound in the neck by an earthenware jug: with Remarks. By* ROBERT SPITTAL, M.D., F.R.S.E., *Fellow of the Royal College of Physicians, and Physician to the Royal Infirmary of Edinburgh.*

(Read to the Medico-Chirurgical Society of Edinburgh, 6th April 1842.)

The following case, though wanting in some of its pathological details, appears to me to be interesting in a medico-legal point of view, from the unusual nature of the weapons employed for suicidal purposes, and which, but for the undoubted certainty attached to all the circumstances, might have been, perhaps, reasonably questioned as capable of being used with such a result.

M. D. or W., a woman, was committed to the jail of Edinburgh in the year 1839, and, although medical attendant of the prison at the time of the occurrence, I had not an opportunity of seeing the deceased until after her death. I will therefore, as it is all the history of the case which I could obtain, quote the statements of the various individuals connected at the time with the prison, whose declarations were made before the procurator-fiscal for the city, and which I have, through his kindness, been permitted to peruse.

1. W. W., a clerk in said jail, states that he received the deceased on Saturday the 23d February, about five evening; that he put the usual questions to her put to all sentenced prisoners; that she answered them quite collectedly, and the declarant took a jotting of her answers, as follows, viz.: age 27; a native of Perth; father dead three years ago; mother alive; married; has two children; never convicted before; can read; belongs to the established church; resides in Dunbar's close (Edinburgh); goes out washing: She was sentenced to solitary imprisonment, but it is usual to allow the prisoner to sleep the first night with another prisoner, especially, as in this case, when a companion comes in with them.

2. J. L. or B., a widow, was sentenced in the police court by the sheriff, on 23d February current, to 28 days' imprisonment along with deceased for theft: neither had been convicted before. They slept in the same cell together on Saturday night. The deceased was much addicted to drinking, and was apparently ill of delirium tremens after coming in. She calmed about midnight, was collected in the morning, and took her milk, but no porridge, to breakfast. The declarant left her about nine, and thought there was nothing the matter with her. She (deceased) said nothing as to being vexed, but remarked it might have been a worse punishment. She used no expression to lead the declarant to think she would attempt to commit suicide.

The declarant has seen her as delirious in her own house as she was on Saturday night (23), and that on two occasions. The deceased was quite calm on the Sunday morning, and said she had been affected by drink. The declarant said, "I'll not drink again when I get out;" when the deceased replied, she would not give it up altogether, but that she would not drink so much as she had done.

3. E. S. P., the matron, had charge of the deceased. Declares that she saw her on Saturday night before she was locked up. She was then crying, but not in any way outrageously: That the declarant was sent for by the watchman about half-past eleven, who told her that the deceased was making a noise. The declarant went and found her muttering something, and saying somebody was chasing her: That the declarant soothed her, and she got better. The declarant then left her, and returned in half an hour. She was then quite calm, and the preceding witness (No. 2) did not seem alarmed about her. That the declarant left the wooden door[1] open to give her more air, and that if noise was made again it might be easily heard. That the declarant saw her in the morning, and gave her a jug and spoon for her milk. She was then quite composed and calm, and washed her face along with the other prisoners: That the declarant remarked, she had been noisy through the night. She answered, she was sorry for that, and would not do it again: That before going to chapel, at eleven o'clock, the declarant gave her a Bible, and told her to learn the first psalm. She remarked, it was the best consolation she had: That on her return after the forenoon service, about one, to give her her dinner, the declarant found her lying on the floor with her throat horribly cut, and quite dead, and the jug broken in pieces, and one portion of it lying at her side all bloody: That witness No. 4 was with the declarant carrying the dinner, and the declarant desired her to wash up the blood and lift the body, while she went and reported to the governor. The governor and doctor to the jail attended immediately.

No. 4. H. M., a convict in said jail, declares and concurs with the preceding witness (No. 3) as to the state the deceased was found in. She was quite dead.

Besides the above declarations, I may briefly state a few further particulars which I have obtained chiefly from the matron, who, as already mentioned, was one of the first who saw the deceased after the fatal act; and for this I need offer no apology, as, in a medico-legal point of view, every circumstance connected with the case, however minute, ought to be stated, and the most apparently trifling may subsequently turn out of paramount importance, when applied to the discrimination of those cases in

[1] There being an iron grated one besides.

which doubt exists as to whether the deceased has come by his death by accident, by suicide, or by the hands of another person.

1*st*, The door of the cell was locked during divine service, and found so by the matron on her return from chapel.

2*d*, The amount of blood on the floor was "very great," and there was a "great quantity in the pail" belonging to the cell, over which the matron thinks "the deceased must have leant her head;" there was also a "good deal" in one of her shoes, which was on her foot, the other being off; her hands were "partially bloody," as also were her clothes, especially about the neck and breast; and the "muslin strings of her cap were very bloody;" lastly, her Bible, from which she had promised to learn the first psalm, was sprinkled with blood at the specified portion.

3*d*, Several pieces of the jug were lying in the blood on the floor, besides the portion found lying at her side, all bloody, as mentioned by the matron in her declaration, which she has informed me was that to which the handle is attached.

4*th*, The spoon—a common iron one—was found lying near her, "very bloody. It seemed to have been much handled," "and much used in the act;" but it was "by no means sharper than other common iron spoons, nor at all altered from its original form;" no attempt had been made to sharpen it.

5*th*, The deceased was found lying "on her side;" "her face had a ghastly grin upon it." The matron felt her arm,—"it was cold and stiff."

As stated in the evidence, I visited the deceased a short time (in about half an hour) after she had been found in the condition described. The body had been before this, by the matron's orders, lifted from the floor to the sleeping-bench in the cell; and the blood, reported to have occupied the floor near the deceased, had been wiped up, and thrown away. Her clothes and hands were still bloody, and her extremities cold and rigid. On examining the neck, which was streaked, and otherwise marked with dried blood, an irregular wound was observed immediately in front of the trachea, extending from the lower edge of the cricoid cartilage, downwards for rather more than an inch, and about an inch in width. The edges of the wound were very abrupt, and had an irregular, torn, or haggled appearance. The trachea was all but exposed in the bottom of the wound, where the parts had a contused aspect. The wound, in truth, had all the appearance as if a portion of the integuments and subjacent soft parts, down to the trachea, involving, of course, a portion of the sterno-hyoid, sterno-thyroid muscles, and thyroid body, had been roughly pinched or torn out, leaving a deep gaping excavation, somewhat smooth at the bottom, especially in the centre, exactly over the trachea. On this visit, I was shown several portions of the jug mentioned by the matron. It was composed of common

white glazed earthenware, and had been recently broken into several pieces, some of which were of considerable size, and possessing very sharp edges and angles.

Sectio cadaveris, about forty-eight hours after death.—On removing the whole of the parts belonging to the anterior portion of the neck, of course including the wound, and submitting them to a more minute examination, a vein more than sufficient to hold a crow quill, and passing obliquely across the neck, from the upper part of the left internal jugular vein, to the lower portion of the same vessel on the right side, was found slit open for about three quarters of an inch. It was situated, as respects the wound, immediately, and deeply within its left edge, and might be termed one of the thyroid veins, which are well known for irregularity.

The contents of the large intestines were by no means healthy. Their consistence was soft and clayey; their colour slate-grey; smell offensive, and containing several ascarides, and one small lumbricus.

The os uteri was enlarged, irregular, firmer than usual, and evidently affected with the scirrhous form of carcinoma, having much the appearance of a white turnip when cut; it was not in a state of ulceration. On the right side of the epiglottis, there was a cicatrix, evidently consequent upon considerable loss of substance, most likely from previous ulceration.[1]

Remarks.—This case forms one of a class not unfrequent in prisons, in which suicide is attempted or accomplished very shortly after the committal of the party, especially in those convicted for the first time, and who have recently been indulging freely in alcoholic liquors, and, it may be, on the verge, or already, to a certain extent, under the influence of delirium tremens. In these circumstances, although, of course, subject to the modifications belonging to the mental qualifications of the individuals, as is well known, a period of extreme anguish and mental depression not unfrequently arises, when half real and half imaginary forebodings of evil haunt their disturbed brains, creating a desire to fly from present distress, and sometimes showing great determination of purpose. In this instance it will be observed, that several of these remarks are applicable. This was her first conviction; besides, the evidence proves that she was accustomed to the use of ardent spirits, and that, to a certain extent, she laboured under delirium tremens, on the night previous to her death; and, though unobserved by those who

[1] I very much regret that I am unable to give a more detailed account of the internal appearances, having either lost, or omitted to make at the time, a note of those belonging to the chest, and, being unwilling to trust to my memory for observations made so long ago, I think it better altogether to omit notice of them. The preparation, with portions of the jug, I have sent to the museum of the Royal College of Surgeons in Edinburgh.

had seen her, this state had, in all probability, continued more or less throughout.

In a medico-legal point of view, it is important to remark the unusual nature of the weapon chiefly employed, viz. the jug, which, no doubt, had been deliberately broken in pieces, for the purpose of obtaining a sufficiently sharp, cutting, and lacerating instrument for her purpose. The result proves that it was so; and it is well known to surgeons, that severe wounds not unfrequently arise from newly fractured earthen-ware vessels. Whether or not the deceased was acquainted with this fact, I cannot pretend to say; but it is curious to observe, that while at least *two* apparently more obvious lethal weapons were within her reach—I allude to the *glass* in the cell window and her *iron spoon*—she had nevertheless made choice of the jug. That the former of these has been employed successfully for the purpose of suicide, I may mention, that a case of this kind is described, in which "sudden death took place from the division of the external jugular vein alone. The individual was in prison, waiting his trial for piracy. He awoke in a state of delirium, attempted to strangle himself, but failing in this, went to the window, and broke out a piece of glass and wounded himself with it, just under the angle of the lower jaw. Then by a rapid succession of cuts, he extended it from side to side, but fell immediately into the arms of his companion, and, after gasping two or three times, was dead. He had not lost more than a pint of blood. Death, it was suggested, may have arisen from the admission of air into the veins."[1] As to the iron spoon, it is unnecessary to enlarge on the obvious advantages which the material composing it possesses over other substances for the construction of cutting instruments; and it is somewhat remarkable, where so much determination of purpose was evinced, that no attempt appears to have been made by the deceased to sharpen the spoon, although the stone floor of her cell rendered this by no means difficult. The probability is, however, that being Sunday, and all quiet within and without, she was afraid of arousing suspicion of her intent, by creating a noise, which any such attempt must of course have done, as well as that to obtain glass from the window; whereas it is quite apparent that the jug might have been, and probably was, fractured with much less noise, either by being forcibly pressed to pieces, or torn asunder.

It is evident, from the site, depth, and direction of the wound, that the deceased had aimed at opening into the windpipe, as is not unusual among persons in humble life, whose ignorance thus, not unfrequently, proves their only protection; while the same

[1] Boston Med. Mag., vol. iii. p. 117, quoted in Beck's Med. Jurisprudence, p. 631. Sixth edition. London, 1838.

instruments, in the hands of the better informed, generally prove fatal. It has been stated, that the wound penetrated down to the trachea, or nearly so, and that it was smooth and bruised-like, especially in its centre, an appearance, it is obvious, not consistent with the idea, that no other weapons but the portions of jug were employed, with which cutting, haggling, and tearing could alone have been accomplished. We are thus called upon to look for some other assistant instrument, and this, we can scarcely doubt, is to be found in the iron spoon, which, as already stated, appeared from the marks of blood upon it, to have been "much used in the act;" and most likely by attempts with its handle at boring, and pressing aside the parts, for the purpose of widening and deepening the wound.

In the absence of positive information as to the amount of blood lost, as well as the pathological details belonging to the thorax, we are not in a situation to come to a very decided opinion as to whether death had been more immediately the result of the hemorrhage alone, or to any extent owing to the entrance of air into the circulation. I incline to the former explanation, not only from the statements of the witnesses, that the amount of blood was great, but from my present recollections, on which, however, I do not wish to rest much, that no frothy blood was observed in the heart, nor other usual indication of air in the circulation. Besides, the fact of the deceased labouring under delirium tremens, though slightly, may have contributed to render the hemorrhage the less easily borne, especially as in all probability the blood had flowed in a considerable and rapid stream from both extremities of the wound in the vessel, quickly causing syncope. Whether death had been at all accelerated by the continued irritation of some of the branches of the recurrent nerves passing to the thyroid body and mucous surface of the trachea, inducing, according to recent experiments,[1] spasmodic constriction of the glottis, is a point, perhaps, worthy of consideration in cases like the present.

ARTICLE IV.—*Case of Disease of the Arteries of the Brain, in which Death took place from Extravasation of Blood. By* JOHN ROSE CORMACK, M.D. Edin., F.R.C.P.E., *and one of the Medical Officers of the Royal Dispensary of Edinburgh.*

Mrs H., aged 46, was of a very spare habit of body during the greater part of her life; but when a girl of about 16, she pro-

[1] Prof. Reid on "Functions of the Eighth Pair of Nerves." Edin. Med. and Surg. Journ., No. 134.

mised to be so stout a woman, that her parents expressed fear lest she should attain an unseemly size. She had a number of serious illnesses, several of them resulting from miscarriages. After one of these accidents, she remained in a state of insensibility for nearly a whole day, and her recovery was despaired of. She was occasionally afflicted with pretty severe bilious attacks. For a long time before her death she was subject to headaches; but particularly during the last months of her life, when she also complained of unusual heaviness in the head. She was in the habit of reading aloud for the amusement of her son, who remarked, that very frequently when so engaged she put her hand suddenly, and with a start, to the back of her head, appearing to suffer very great pain: but it was so transient, that it almost never caused her to desist from reading.

On the 29th of February 1836, she was suddenly seized with pain in the back of her head, and at the same time the catamenia became suppressed. Dr John Campbell having been called in, she was freely bled from the arm, after which the pain in the head was less severe. Purgatives were also largely given, which brought away copious bilious stools. The urine was very turbid, the conjunctivæ of both eyes had a yellow tinge, the tongue was a little furred, but the pulse was natural. She had some nausea. There was no paralysis, drowsiness, nor any tendency to stupor. She was put on low diet, and the use of purgatives continued. Under this treatment, the headache became much relieved, and she appeared to be convalescent.

On the 21st of March, when sitting up as usual, after taking breakfast, she suddenly fell into a state of insensibility, with very feeble and scarcely perceptible pulse, and other symptoms of collapse. Her head was shaved, and a blister applied to the nape of the neck and occiput. On account of the great swelling which occurred, cordials were administered. The bowels were opened by means of a cathartic enema. During the whole of this day, she continued in pretty much the same state. The arms and lower limbs appeared deprived of mobility and sensibility, and her urine was passed in bed. The pupils were contractile, and the eyes followed an object when presented to them. The lips were also moved to receive drink, and she put out her tongue when desired.

On the 22d, the symptoms of paralysis and collapse continued. Strabismus supervened. There was a short interval of apparent improvement, which was soon followed by a state of greater insensibility, and increased symptoms of collapse. In the evening Dr Abercrombie saw her, when it was agreed that there was no room for active treatment. The former orders were repeated, it being directed that she should have beef-tea occa-

sionally, and during each hour a dessert-spoonful of brandy mixed with water, some of it being administered every ten minutes. In compliance with the wishes of the relatives, I staid with her during the night. The symptoms which I observed were very similar to what have been already described, though somewhat aggravated. The breathing was laboured, and during the night became more and more rapid and sonorous, and at intervals she uttered a deep sigh. With the exception of her face, the whole surface of the body was of the natural warmth. She did not put out her tongue when requested, and only occasionally prepared her lips for receiving drink. It is worthy of remark, that when offered something by her son, she shaped her lips so as to receive the spoon, but paid no attention when I or any one else requested her to take it. For some time after, she ceased even to attend to her son's voice; the power of swallowing remained, but this she also soon lost, and expired in my presence on the morning of the 23d, at eight o'clock, having been fifty-four hours in a state of almost complete insensibility before death.

Autopsy, 43 hours after death.—On opening the head, the superficial vessels of the brain were seen turgid with blood. Under the arachnoid coat some serum was found effused; under it also, generally over the surface of the hemispheres and lobes of the brain, there was much blood extravasated, which was considerably accumulated in some places, particularly at the base of the brain and between the hemispheres. In one or two spots, the blood was exterior to the arachnoid coat, but whether this depended upon rupture of that membrane during life, or upon handling of the parts, could not be ascertained; but we were of opinion, that it was owing to the former cause. The lateral ventricles were filled with serum tinged with blood. The extravasation of blood extended over the cerebellum. The arteries of the brain were found in a partly calcareous state, and were also partially converted into the brittle earthy degeneration described by Scarpa. I made the examination in the presence of Drs Abercrombie and Campbell. We were obliged to be less minute than we desired, being hurried by the relatives.

Remarks.—It is obvious, that in this case death was caused by the extravasation of blood, consequent upon the rupture of one or more diseased arteries. The previous symptoms are interesting, and indicate the very long period during which the morbid changes had been going on. The severe pain which the patient occasionally experienced, probably proceeded from some peculiar effect being produced upon the nervous system, by the blood meeting with

temporary obstruction in its passage through the arteries of the brain.

In the First Number of Guy's Hospital Reports, Dr Bright has given several interesting cases, illustrative of the diagnosis, in cases of disease of the arteries of the brain. In all the instances which he mentions, the affection was attended during life by pain in the occiput; and he believes that, from the seat of the pain, may be inferred the arteries which are diseased. In cases such as those he has published, where the pain was in the occiput, he would say, that the *vertebral* arteries are diseased. Before, however, anything satisfactory can be stated on the subject of diagnosis of diseased arteries of the brain, a number of additional facts must be collected.

The subject is one of very great importance to the medical jurist, as a blow, which would do little injury to another, in whom the arteries possess their usual elasticity, may occasion death in an individual in whom there is a brittleness in the arterial coats.

EDINBURGH, May 1842.

ARTICLE V.—*Cases of Hemorrhagic Diathesis. By* JAMES ALLAN, M.D., *of Haslar Hospital.*

(Read at the Medico-Chirurgical Society of Edinburgh, 6th April 1842.*)*

On the 18th August 1820, I was called by A. R., a respectable and intelligent man, to visit his son, a fine boy about five years old, and found him with a slight abrasion of the cuticle of the left wrist, caused by a bit of window glass a few hours before. It appeared so trifling that I should not have taken notice of it, had I not been told by the father that he had lost a child by hemorrhage from an injury equally slight. I therefore remained by him to observe the progress of the bleeding; it was florid, and appeared to be more serous than usual. I applied pressure with the finger for some time; but on removing it, the oozing continued the same. I bound up the part with a compress of lint, and left him. He was a singularly beautiful boy, with an unusual blush on the skin, auburn hair, and bright hazel eyes; and these appearances became more impressed on me from the father's statement, that the child who had previously died was exceedingly like him.

The first case had been attended by Mr Howie. I called on him, and we agreed to visit the boy together. In a few hours, we found the compress and bandage soaked with blood, and the part exhibiting the same appearance as at my last visit. Mr Howie stated to me, that the former case had been also a slight

superficial injury, to which he had applied all sorts of styptics, pressure, exposure to the air, cold lotions, in short, every thing that he could think of, but with no avail, and his little patient died on the eighth day; and for the last twenty-four hours, the discharge was colourless serum. We agreed to bind a small button of sulphate of alum on the part, gave him an active calomel purge, and directed him to be kept cool for the night. I saw him early next morning; the bandage and bed on which the hand rested were red with blood; the alum had dissolved, and caused a vesicle, but the blood only came from the original injury. I applied the nitrate of silver about 8 o'clock A.M., and bound a bit of thin lead on the part, but without the slightest advantage. At 4 P.M. I applied the actual cautery, and left the part exposed to the air. I again saw him at 8 P.M., and found the oozing the same. I left with the father a small quantity of acetic acid, with directions to touch the part with it occasionally, to try to form a coagulum.

20*th*. Saw him again with Mr Howie. The part had been touched repeatedly with the acetic acid, but this had not in any degree checked the oozing. A drop of oil of turpentine was applied, a compress placed on the part, and a bandage rolled from the fingers to the shoulder. I saw him in the evening; the bandage and bed were wet with blood, but evidently less coloured; the pulse of the other arm 78, soft and small; no thirst; skin cool; bowels had been free, and he had taken food as usual. He made no complaint of any sort. The bandage was retained.

21*st*. Had passed a quiet night; the bandage was removed; the vesication was enlarged; and the oozing seemed to have extended to the adjoining surface, which was only about the size of a sixpence; pulse small, and about 100; no thirst, nor inclination for food, nor could I get him to take a small quantity of brandy, which Mr Howie recommended. The father was anxious to apply cob-web, which was done, but attended with no good effects. In the evening he appeared to have lost ground; the pulse was small, and 120; his lips were bloodless, and the breathing was hurried. I gave him ten drops of laudanum, and laid a bit of green oak bark on the part.

22*d*. Visited him with Mr Howie; he had passed a quiet night; the bed-clothes were wet, and still less coloured; pulse scarce perceptible at the wrist; no thirst nor inclination for food; had passed no urine for ten hours; that secretion had gradually become less in quantity, and perfectly limpid; the action of the heart was indistinct and irregular. I directed the arm to be covered with cloths wetted with cold water, and the wrist to be kept dry; and as he would take no food, an enema of arrow root with Tinct. opii ℥ xx. was given. In the evening

he was still feebler, and the oozing from the wrist nearly colourless.

23*d*. A bit of linen rag had been placed on the part, which was wet, but scarcely coloured; the pulse not perceptible; breathing slow, with frequent sighing; action of the heart intermitting; lips dry; will take no drink or food; has been asleep for about six hours; he makes no complaint. Zinc lotion was applied during the day; in the evening he took some thin milk porridge, and rejected it immediately; no urine appears to be secreted.

24*th*. He lay the whole day without motion; no discharge of urine; heart indistinct; slight oozing from the wrist.

25*th*. I found that he had died in the morning. I examined the wrist with a glass, and could only observe a few small points, on which small particles of colourless fluid rested; the injury was on the lower part of the wrist, in fact, more on the palm of the hand, and quite superficial. He had been vaccinated about ten months old without any unusual result from the operation, and had never sustained any injury of any sort. The slightest pressure or blow was followed by a black mark immediately. From the great likeness of both children, the father had a dread of any accident to him after the death of the other child, and he had picked up somewhere a journal describing the disease, as it appeared in a family in America, which he gave me to peruse, and which I found exactly similar to the case described; he also stated, that the first child had been cut deeply with a knife, (I think in the hand,) and the blood stopped in the usual manner; but he was of opinion that the greatest danger was from a superficial injury, as proved to be the case in both subjects. I examined the rest of the children, and found them fair-haired, with blue eyes, and the father felt assured that they had not the hemorrhagic tendency, which has been fully proved by no other case occurring since. I visited him last year, and they have all grown up fine healthy children. I was induced to decline an examination of the body from the situation of the mother at the time.

My attention was immediately after called to the uncle of the boy, S. M., aged 18, whom I found of the same constitution, and who had been at death's-door repeatedly from injuries. He had lost an eye by an arrow when a child, when the hemorrhage had continued for several days. He was employed in a writer's office for some months, and found that the confinement and sedentary life did not agree with him; he showed me his left arm, which was perfectly black, from the elbow to the wrist, from pressure on the desk; there was also a black line across his stomach from the same cause. I attended him for about two years, during which time he showed the hemorrhagic tendency to a great degree. He suffered several attacks of bleeding from the nose and gums, and

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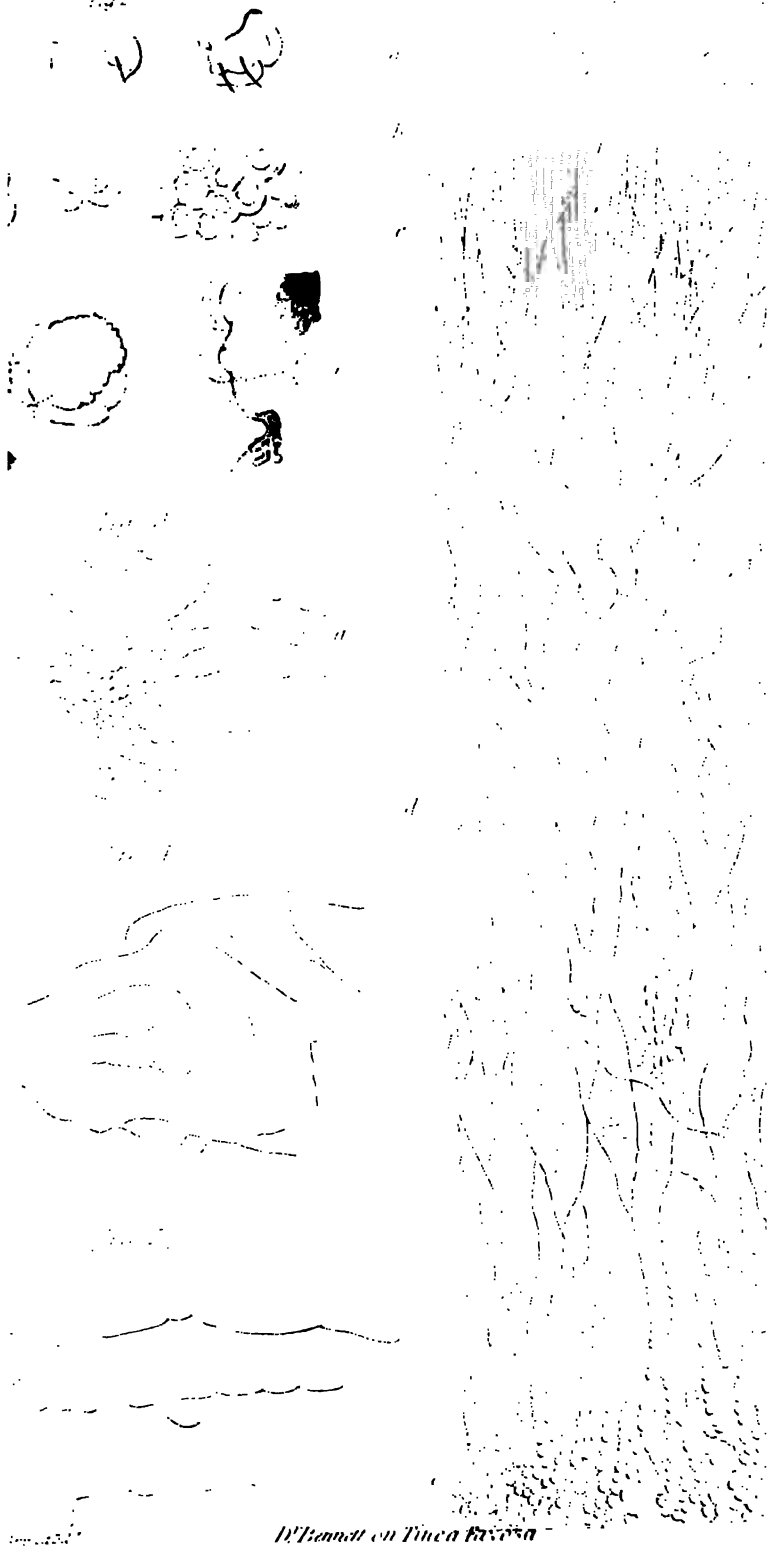


superficial collections of bloody serum under the cuticle, from pressure and slight bruises. He had been in the habit of taking a solution of sulphate of magnesia for years, about once a-week, as an active purgative, which did him more good than any thing else. I gave him Tinct. Ferri Mur. and ordered salt-water baths in the summer, and once saw the effects of a cut with a knife in the hand, which did not bleed more than usual, and healed up kindly. I left the place, and did not see him for about a year. When next I saw him, he had been confined to bed for some weeks, the joints were swelled and discoloured, he was much debilitated, and bore the appearance of sea-scurvy. Shortly I heard of his death.

He was of the same complexion, hair, and colour of eyes, as the boy R., and felt so convinced of the fatal tendency of his disease, that he gave up all interest in any trade or profession for the last ten years of his life. I heard that some of his mother's relations had been subject to hemorrhage, but cannot find any particular remark about them in my journal.

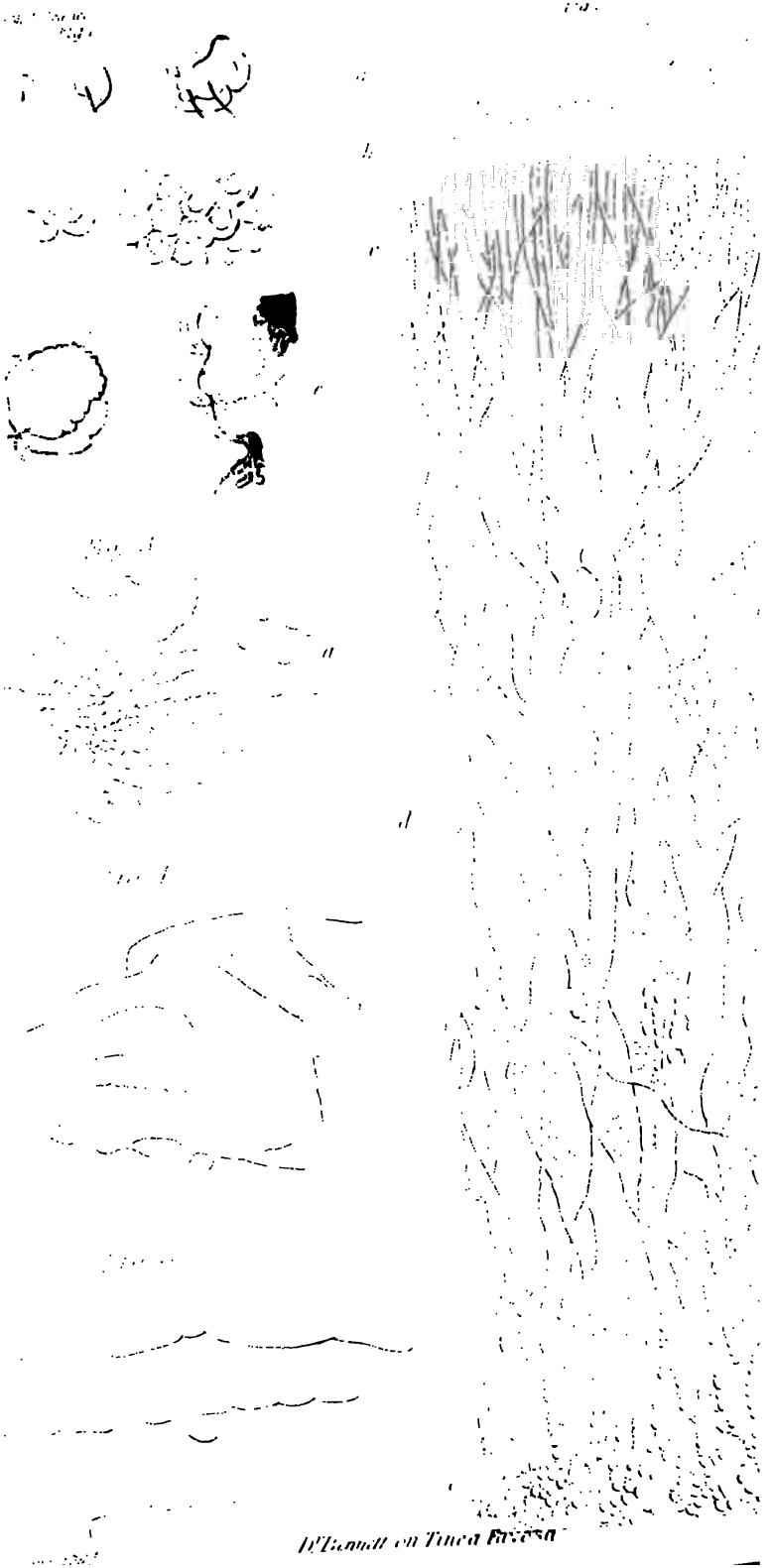
I ought to mention in relation to R., that a small gum catheter was passed on the 22d, and no urine discharged; it was passed again after death, and the bladder found empty. In neither of the cases did I ever see the blood coagulated on the skin or bed clothes. Death appeared to take place more from decomposition of the blood, the serous portion seeming to drain off, than from loss of quantity, for the drops were slow, and many seconds between each.

HASLAR, 16th Jan. 1842.

ARTICLE VI.—*On the Vegetable Nature of Tinea Favosa, (Porrigo Lupinosa of Bateman); its Symptoms, Causes, Pathology, and Treatment.* *By* JOHN HUGHES BENNETT, M.D. Edin., *Lecturer on Clinical Medicine, &c. &c.*

The discovery by Bassi[1] of the vegetable nature of the disease named muscardine in silk-worms, which causes so great a mortality amongst those animals, has opened up to pathologists a new field for observation. More recent researches have demonstrated, not only in insects, but in higher animals, and even in man himself, that certain diseases owe their peculiar characters to the growth of fungi or cryptogamic plants in the animal textures. Schönlein of Berlin[2] was the first to detect mycodermata in the tinea favosa, an observation confirmed by Fuchs and Langenbeck[3] of Göttingen, and by Textor. It is to Gruby of

[1] Del Mal. del Segno Calcinaccio o Muscardino, sec. ed. Milano, 1837.
[2] Müller's Archives, 1839, p. 82.
[3] Comptes Rendus de la Polyclinique de Göttingen, 1840.



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Vienna, however, that we are indebted for the most perfect description of these vegetations, and for new researches on this subject. On reading last autumn the abstracts of his communications, made to the Academy of Science of Paris,[1] I examined the crusts on the head of a boy who laboured under the disease, and immediately detected the cylindrical and ramified appearances he has described. Since then I have made minute observations on thirteen cases which have come under my notice, and some of the results formed a portion of a memoir read last January to the Royal Society of Edinburgh.[2] In the present communication, however, I shall endeavour to give a succinct history of the disease, as I have observed it at the Hôpital St Louis in Paris, and in the cases just alluded to, bring forward a new view of its pathology, and point out a line of treatment based upon this, which has succeeded in every case where it has been fairly tried, even when all other methods had failed.

Mode of Development and Symptoms.—By most writers, amongst whom may be cited Willan, Bateman, Biett, Cazenave, and Rayer, tinea favosa is described as commencing in a pustule, which breaks and forms the peculiar scab. Others, such as Baudelocque, Mahon, Alibert, and Gibert, deny its pustular nature, and state that it commences in a crust. With a view of determining the mode of its commencement, I made the following observations.

Observation 1. All the crusts were removed from the head of a boy, labouring under the disease, by the application of poultices. In a few days the scalp was quite clean, presenting here and there, anteriorly, patches about the size of half-a-crown, deprived of hair. In these bald portions of the scalp, the skin looked somewhat injected and glossy on the surface; but there was no pain on pressure, no abrasion on the skin, or other symptom of inflammation or local lesion. The disease was now allowed to take its natural course, and I watched its development daily. In two days, minute pustules were observed to be thinly scattered over the surface, the contents of which, when examined under the microscope, were found to consist of normal pus. In two days more, the number of pustules had considerably increased, and those formerly observed had become larger. I surrounded several of the latter with a ring of ink, in order that there might be no difficulty in following the changes they underwent, and distinguishing them from others. In another day two of the pustules under observation broke, and the matter exuded formed a scab, which, under the microscope, was found to be

[1] Comptes Rendus, tom. xiii. p. 72 and p. 309.

[2] On Parasitic Vegetable Structures found Growing in Living Animals. Edinb. Philos. Trans. vol. xv. p. 277.

composed of epidermic scales, and irregular amorphous masses, without any trace of vegetable structure. In the interstices of these scabs, the scalp was covered with a furfuraceous desquamation, consisting only, as shown by the microscope, of epidermic scales. On the sixth day the scabs were of a dirty yellow colour, but not of the peculiar tint or form of the porrigo crust. Only a few pustules remained, and the injected appearance of the skin was gone. On the tenth day, the head was covered with irregular agglomerated scabs, similar to those produced from impetigo. The furfuraceous desquamations also continued. On the twelfth day, I detected, for the first time, at the posterior part of the scalp, where the hair was most abundant, small bright yellow spots, the size of a pin's head, somewhat depressed below the surface. On removing one of these spots with the point of a lancet, and examining it by means of a biconvex lens of an inch focus, I found a smooth, cupped-shape, bright yellow capsule, the diameter of which was about $\frac{1}{20}$ of an inch. Its margin was continuous with several epidermic scales, which it was necessary to cut or tear through before the capsule could be removed. Having done this, it was readily separated from the parts below, except where the hair, which usually perforates these crusts, connected it inferiorly with the dermis. On pulling this out, or cutting it through, the capsule could be removed entire, leaving behind it a reddened inflamed concave depression, corresponding to the convexity of its inferior surface. On placing this capsule in a drop of water, pressing it between two slips of glass, and examining it with a magnifying power of 300 diameters, it was found to be composed of a finely granular mass, in which were numerous long-jointed filamentous tubes. These were seen coming from the edge of the capsule, as M. Gruby has described. At this time the round and oval sporules were few in number, and did not appear in groups or chains until three days later.

From this observation I was led to suppose that those pathologists who had classified the porrigo lupinosa among the pustulæ were correct. Further examination, however, convinced me that these are not essential to the disease.

Observation 2. In a boy of well-marked scrofulous habit, who laboured under the tinea favosa in its most characteristic form, the crusts over the two anterior thirds, and bald portion of the scalp were numerous, round, and isolated, but matted together posteriorly, where the hair was still abundant. When these were examined microscopically, the mycordermatous vegetations were immediately detected as in the last case. All the crusts were removed by the application of poultices, and the head rendered perfectly smooth and clean. In three days a furfuraceous desquamation of the cuticle appeared, which became more and

more abundant until the eighth day, when the small bright yellow spots of the porrigo made their appearance, not having been preceded by the formation of any pustules. The crusts were removed several times in succession, and the disease again allowed to appear; but in this case the presence of the peculiar favus crusts was never preceded by that of pustules.

In the other cases which have come under my observation, I have satisfied myself that the formation of pustules is not essential to the disease, although they are often present. Hence the mistake of those pathologists who classified porrigo favosa amongst the pustulæ. M. Gruby says that they are *never* present, which is equally erroneous, although they appear to be a secondary result, attributable to the irritation the disease produces in some individuals. On the other hand, I have never seen this affection produced, without having been preceded by desquamation of the cuticle, an observation which appears to me of some importance, inasmuch as if true, the disease would be allied to the order *squamæ*.

It would appear, then, that the first morbid change is increased vascularity of the skin, accompanied with a desquamation of the cuticle; and that in a period varying from six to twelve days, small spots of a bright yellow colour, resembling sulphur, may be detected. These gradually augment in size, but even at the earliest period, may be observed, with a lens, to have a central depression, through which a hair may generally be observed to pass. The crust or capsule may enlarge to about the size of a shilling, and if it be isolated, still retain its rounded form. Usually, however, its edges come in contact with other capsules, and then it loses its rounded shape, and assumes the hexagonal or honeycombed appearances described by authors. I consider, then, that the porrigo lupinosa, and porrigo favosa, constituting different forms or varieties of some writers, to be merely different stages of the same disease, or to be dependent upon the greater or less aggregation of the crusts. On the first appearance of the capsule, its edges are somewhat depressed below the surface of the cuticle, but as it increases in size, they become more and more elevated, and at length are very prominent. At first, also, the whole capsule appears of a homogeneous bright yellow, but when further developed, its centre assumes a whiter colour. This arises from the aggregation of the sporules of the pant, which are more abundant in this situation. As the development proceeds, this central yellow whitish mass assumes a mealy, powdery consistence, encroaches upon the edges of the capsule, which gradually disappear, whilst its upper concave form becomes convex, as Gruby pointed out. In general, an inflammatory ring is seen round the crust, which, as the capsule becomes elevated above the skin, enlarges, and assumes a deeper colour, indicative

of the increased local irritation. At length the whole cracks or splits up; all regular form is lost; a dense thick crust covers the scalp; an odour like the urine of cats or mice, is evolved; and in chronic cases, vermin deposit their eggs in the interstices, and crawl in large numbers over the surface.

The other local symptoms are merely those which result from the greater or less degree of irritation produced in different persons by the changes above referred to. At first, scarcely any uneasiness is felt; perhaps occasional slight itching of the part. As the disease progresses, however, the itching becomes more intolerable, and induces the patient to rub and scratch the scalp. By these means, several of the crusts are forcibly torn from their attachments, and considerable effusion of serous fluid and blood is produced. Sometimes inflammation is thus occasioned, terminating in ulceration, and the discharge of an ichorous fluid from beneath the crusts. At an advanced stage of the disease, the ammoniacal odour exhaled is insupportable to those who surround the individual, and the ichorous discharge, vermin, and crusts, which cover the affected parts, present a most disgusting appearance.

Although the disease most commonly attacks the hairy scalp, it may occur on the forehead, temples, cheeks, nose, chin, ears, shoulders, arms, abdomen, lumbar region, sacrum, knees, and legs. Alibert gives a plate in which it is figured in all these situations. I have myself seen it on the back, arms, and inferior extremities, where I could detect no hairs perforating the capsules.

The constitutional symptoms are of the utmost importance, but, generally speaking, receive little attention from practitioners. In every individual affected, who has come under my notice, the general health has been greatly deranged, and a scrofulous or cachectic constitution has been more or less evident. In some the *facies scrofulosa* of authors has been well marked; in others there were engorgements of the lymphatic glands of the neck; and in the only fatal case which has come under my observation, there were found tubercular depositions in the lungs, mesenteric glands, and other textures. Indeed, the generality of individuals who die labouring under tinea favosa, perish from phthisis, or other form of tubercular disease. The beautiful plates published by Alibert, are in this respect far from being true to nature; for whilst the capsules and crusts are accurately drawn, the individuals affected are evidently ideal personages, enjoying the most robust health, and possessing even the utmost beauty of form and feature. In the generality of cases, on the contrary, the patient is thin, the countenance is of a dirty yellow colour, and the whole aspect betrays depression of the vital powers. The appetite is often impaired, the alvine evacuations irregular,

and the functions of digestion and nutrition are impeded. Numerous writers have observed the physical and mental development of the individual to be retarded; and Alibert gives instances where the epoch of puberty was considerably delayed.

By those not well accustomed to the diagnosis of skin diseases, tinea favosa has often been confounded with other eruptions of the scalp, more especially eczema and impetigo, or the combination of these diseases known as the eczema impetiginodes. In none of these forms of porrigo, however, do the yellow crusts or scales present traces of vegetations when examined microscopically. This, therefore, furnishes the real diagnostic and pathognomonic character of the disease, and must be considered of great value, when, as I shall subsequently attempt to show, it has been occasionally mistaken by the most practised dermatologists.[1]

Causes.—Alibert considered the disease hereditary, and gives cases confirmatory of this view. As regards age, it is by far most common in children between the ages of three and twelve years. In infancy, and after puberty, it is more rare, although sometimes present; and in a few instances it has been observed in persons advanced in years. In almost all the cases which have come under my notice, the individuals have been exposed to causes which depress the vital powers, and are well known excitants of tuberculous disease. Close questioning will usually elicit that they are of a scrofulous family; have been exposed for some time to infected or corrupted air; inhabited small rooms, or confined streets, or dwellings situated in unhealthy situations; that the aliment has not been very nutritive, &c. &c. Hence why the disease is common in workhouses and jails, and most prevalent amongst the poorer classes of the population, and individuals who obtain a precarious existence.

Almost every writer on the disease considers it to be contagious. Bateman, Guersent, and others, speak of its spreading amongst school-boys, from the employment of the same towels, combs, caps, &c. Gibert has seen it propagated in the wards of St Louis from the same cause. It has been observed, he says, two or three times to be communicated by young people kissing each other, when it has appeared in the chin or neighbourhood of the mouth. Mahon even pretends to have contracted favus incrustations on his fingers, from having neglected to wash them after dressing the heads of those affected. Alibert, in his early writings, also thought it to be contagious. In his later works, however, he evidently doubts it, says that much exaggeration has

[1] I am not aware that this peculiar disease has ever been observed in any of the lower animals. I may therefore mention that I have observed it in a common house mouse, in which animal the same mycodermatous vegetations were to be detected as in man.

been made use of on this subject, and states that the *amour propre* of parents usually induces them to ascribe the origin of so disgusting a disease to external communication. He further observes, " Mes éleves ont souvent tenté d'inoculer en notre présence, le produit de l'incrustation faveuse, sous plusieurs formes, et en variant les procedés. Le plus souvent il n'en rien resulté, dans d'autres cas est souvenu une inflammation passagère, qui s'est bientot évanouie—parfois une suppuration semblable qui pourrait s'établir par tous irritant mechanique, ou par l'insertion d'une substance étrangère dans le tegument."[1] Gruby also, on discovering its vegetable nature, inoculated thirty phanerogamous plants, twenty-four silk worms, six reptiles, four birds, and eight mammifera, but only produced the disease once, and then in a plant. The human arm was inoculated five times, but, independent of a slight inflammation and suppuration, no effect was produced.

Remembering the ill success of these experiments, I thought it right to try whether the disease could be propagated in another part of the individual already affected; because if not susceptible of extending in a person already predisposed, it was not likely to be caught by one in perfect health. I accordingly made a small oblique puncture in the neck of a boy labouring under the disease, about an inch below the occipital protuberance, and an inch and a half from the large masses of crusts connected with the scalp. I introduced through this puncture, under and into the cuticle, some of the broken-down yellowish-white friable matter found in the centre of the capsules, which consists principally of the sporules of the plant. The wound healed up in a few days without presenting any thing abnormal. I also inoculated my own arm in the same manner, but without any result. I repeated these inoculations twice on the boy and on myself with the matter of the pustules instead of that of the crusts, but in every case without success.

It then occurred to me, that, as the disease usually appeared in the hairy scalp, it might be more readily produced in that part of the integuments. I therefore had my own scalp inoculated in two places with the pus taken from one of the pustules. It excited inflammation, suppuration, and ulceration. The matter discharged formed hard scabs, which, however, in no way resembled those of the porrigo, or exhibited vegetations when examined with the microscope. After continuing three weeks, during which period one of the sores extended to the size of a shilling, and both ulcerations still spreading, they were destroyed by the frequent application of caustic. I subsequently had my head inoculated with the sporules of the mycodermata, but

[1] Traité des Maladies de la Peau, fol., p. 443.

the wound healed up completely without producing any appreciable result.

I afterwards rubbed a mass of the white friable matter, constituted of the sporules, upon the arm, so as to separate several of the epidermic scabs, and induce erythematous redness. Slight superficial abrasions were produced, which healed in a few days, without presenting any evidence of mycodermata having germinated. I also sprinkled the sporules over an extensive accidental abrasion on the leg, which, however, healed up in the usual manner.

Thus, in none of these experiments, performed in various ways, and frequently repeated so as to avoid fallacy, could I succeed in causing the plant to germinate on parts different from those which originally produced it. In other words, I could not communicate the disease to other individuals, or from one part of the same individual to another.

I do not consider that these experiments are decisive of the question,—they require to be repeated by others more extensively and under varied circumstances; but I am of opinion, that more exact observations should be made on this point. In the majority of instances, the vague assertions of parents, or of the patients themselves, are accepted as the evidence of its contagious nature, and as children, either in their sports or at school, associate with those who may be supposed to be affected, nothing can be more easy than thus to account for its appearance. It may happen that the disease is produced in schools and hospitals, not so much from contagion, as from the circumstance that all are exposed to the same hygienic and endemic causes. In short, the objections urged at different times against every contagious disease, might be brought forward here. Another circumstance ought also to be taken into consideration. It is evident that Biett, Cazenave, Rayer, and other dermatologists have occasionally confounded the pustules of impetigo, which are accidental, with the peculiar favus crusts. Thus, Rayer gives the case of a nurse who contracted, he says, favus *pustules* on the arm, which supported the head of a child affected with the disease.[1] Now, the experiments detailed show, that the purulent or ichorous matter of the accidental pustules may occasion inflammation, suppuration, and ulceration when inoculated, without inducing tinea favosa, and I cannot but consider it likely that ordinary yellow scabs on the head from impetigo, have often been confounded with true favus.

The question of the contagious or non-contagious nature of tinea favosa is important, not only as one affecting the health of communities, but as influencing the future character of the individual. At an age when children are most open to general and

[1] Dict. de Méd. Prat., art. *Teigne.*

moral instruction, the occurrence of a local disease which causes them to be shunned by their playmates, shut out from the active sports of childhood, and regarded from no fault of their own as an object of disgust, not only retards the corporeal development, but reacts most unfavourably upon their minds. Debarred from the feeling of emulation, which forms so powerful an incentive to the educational advancement of youth, they evince no desire to excel, the temper becomes soured, and there is every reason to fear that ignorance and a sense of mental and bodily inferiority has only fostered malice, and been the origin of more prominent vices in after life.

PATHOLOGY.—I have shown, when describing the symptoms and mode of development of the disease, that it is not essentially pustular, and that the pustules occasionally present are accidental. On the other hand it has been shown, that the peculiar favus crust is composed of a capsule of epidermic scales, lined by a finely granular mass; that from this mass millions of mycodermatous plants spring up and fructify; and that the presence of these vegetations constitutes the pathognomonic character of the disease. In order to examine the development of these vegetations microscopically, it is necessary to make a thin section of the capsule, completely through, embracing the outer layer of epidermis, amorphous mass, and light friable matter found in the centre. It will thus be found, on pressing this slightly between glasses, and examining it with a magnifying power of 300 diameters, that the cylindrical tubes spring from the sides of the capsule, proceed inwards, give off branches dichotomously, which in turn terminate in round or oval globules. These tubes are from the $\frac{1}{1000}$ to $\frac{1}{6000}$ of a millimetre in thickness, jointed at regular intervals, and often contain molecules, varying from $\frac{1}{10000}$ to $\frac{1}{10000}$ of a millimetre in diameter. The longitudinal diameter of the sporules is generally from $\frac{1}{3000}$ to $\frac{1}{1000}$, and the transverse from $\frac{1}{5000}$ to $\frac{1}{1500}$ of a millimetre in diameter, (Gruby.) I have seen some of these oval and round, twice the size of the others. The long diameter of the former measured $\frac{1}{75}$ of a millimetre. The sporules agglomerated in masses are always more abundant and highly developed in the centre of the crust. The cylindrical tubes, on the other hand, are more readily found near the external layer. I have occasionally seen swellings on the sides of the jointed tubes, which are apparently commencing ramifications.

Mr Erichsen,[1] a recent writer on favus, has treated its vegetable nature as a mere hypothesis, "founded merely," he says, "upon the outward appearance, sufficiently strong certainly, which the cup-shaped crust of favus offers to lichens, or vegeta-

[1] Medical Gazette, December 1841, p. 415.

ions of a similar description." But surely had this gentleman ead the observations of Gruby, to which he alludes, he never ould have imagined that such were the grounds on which the roofs of its vegetable nature rest. Still less could he have allen into so singular an error, had he demonstrated the structure of favus under the microscope, as is absolutely necessary in rder to see the mycodermatous plants. If long hollow filaents, jointed at regular intervals, containing molecules within heir cells, springing from an unorganized granular mass, and iving off towards their extremities round oval bodies or porules, arranged in bead-like rows, be not vegetables, what are hey? The animal tissues present nothing similar, while numeous plants, long known to botanists, present the same identical tructure. But not only must they be referred to the vegetable ingdom, but to a considerably elevated position among the ryptogamic plants. The *protococcus nivalis* and *torula cerisiæ*, universally considered as plants, together with the *sarcina entriculi*, lately described by Goodsir, are immeasurably beeath them in complexity of structure; and many of the *mucores* r moulds, growing in damp places, are, as I have satisfied myelf by personal examination, much more simple in their organsm. Any one who looks over the cryptogamia of Greville, will t once detect the strong analogy between the mycodermata ound in tinea favosa, and the *penicilium glaucum* of Link, the *spergillus penicillatus*, *acrosporium moniloiddes*, *sporotorium miatum*, *nostoc cæruleum*, and other plants therein figured. The egetable nature of these structures, indeed, cannot for a moent be doubted, by any one who has personally examined hem, or who is accustomed to microscopic researches.

The seat of favus has been much disputed by authors. By ome it has been located in the piliferous bulbs or follicles, Duncan, Baudelocque, Rayer), by others in the sebaceous lands, (Sauvages, Underwood, Murray, Mahon), and by a third arty in the reticular tissue of the skin, (Bateman, Gallot, hompson). According to Gruby, the plants grow in the cells f the epidermis, the true skin is compressed, not destroyed, and he bulbs and roots of the hairs and sebaceous follicles are only econdarily affected.

I have made observations to determine the correctness of this tatement, and found that the whole inferior surface of the capule is formed of epidermic scales, thickly matted together. hese are lined by finely granulated matter, from which the lants appear to spring, and which unites the branches and porules together *en masse*. Superiorly, however, the epidermic cales are not so dense; and I have always found them more or ss broken up, and not continuous. This observation is valuble, as indicating the probable mode in which these plants, or

the sporules producing them, are deposited on the scalp. It will be seen, that the appearance of the peculiar porrigo capsule, was invariably preceded by a desquamation of the cuticle, that is, a separation or splitting up of the numerous external epidermic scales which constitute its outermost layer. Hence it is more probable, that the sporules or matters from which the vegetations are developed, insinuate themselves between the crevices, and under the portion of epidermis thus partially separated, than that they spring up originally below, or in the thickness of the cuticle.

One important point connected with the pathology of this disease appears to have escaped all previous writers except Mr Erichsen, namely, its connection with tubercle. This gentleman, while he treats the *fact* of its vegetable nature as hypothetical, says, referring to the views of those who preceded him, "I hope to be able to show that all these opinions are incorrect, and that the matter of favus is a modification of tubercle—that it is a tubercular disease of the skin. By tubercular I do not mean a disease like lupus, characterised by small firm tumours, but a disease, the nature of which consists in the deposition of that *heterologous* formation called tubercle." This view of the nature of tinea favosa I have long held; and it was distinctly stated by me, when treating of the pathology of scrofula, in a work published last autumn.[1] The crust of tinea favosa, however, is not constituted alone of tubercular matter, as Mr Erichsen supposes. This peculiar effusion only constitutes the soil from which the mycodermatous vegetations spring, as I shall now endeavour to show.

Gruby describes the mycodermata of tinea as springing from an amorphous mass, of which the periphery of the capsule is composed. This mass, according to my observations, is composed of a finely granular matter, and identical in structure to certain forms of tubercle. The cheesy matter, for instance, so frequently found on the secreting surface of serous membranes, and into tubercular cavities and other structures in chronic cases of tuberculosis, or general tendency to tubercular deposition, presents this character. Every pathologist who has minutely examined tubercle, recognises a granular form, in which there is no trace of nucleus or cell, and which, therefore, we are warranted in considering as unorganised.[2] I have myself repeatedly examined this tubercular matter, and been unable to detect any difference between it and the mass in which the vegetations of tinea appear to grow. Chemical analysis of this form of tubercle demonstrates it to be composed principally of albumen, with a

[1] Treatise on the Oleum Jecoris Aselli, p. 94. [2] Gerber, Gulliver.

inute proportion of earthy salts; sometimes there is combined ith it a small quantity of fibrine or gelatine. If this general sult be compared with the analysis, by Thenard, of favus mat-r, the identity between it and tubercle must appear highly pro-ible. He found in 100 parts—coagulated albumen, 70; gela-ne, 17; phosphate of lime, 5; water and loss, 8 parts. Thus e evidence furnished by morphology and chemistry, agree in termining the granular matter found in the crusts of tinea fa-sa to be tubercle. If in addition to this we add the predis-osing causes of the disease, which are the same as those tending tubercular deposition in general, remember the cachectic con-itution of those affected, and the uniformity with which pul-onary or mesenteric tubercles are found in those who die bouring under it, it appears to me that the circle of evidence is mplete.

I consider, therefore, that the pathology of tinea favosa is best derstood by considering it a form of scrofula, understanding that term a peculiar state of the constitution accompanying bercular deposition in one or other of the animal textures: at in this particular disease the tubercular effusion takes place mongst the cells of the epidermis, and there constitutes a soil r the germination of mycodermatous plants, the presence of nich is pathognomonic of the disease.

Treatment.—Almost every species of treatment has been had course to, in order to remove this disagreeable and intractable sease. My object, therefore, at present, is not so much no-lty, as it is an endeavour to recall principles and modes of eatment, which have been much lost sight of by practitioners, d to which the symptoms, causes, and pathology of tinea favosa, previously described, naturally lead.

Before entering, however, into the mode of treatment which I ve myself found successful, I must remark, that every author o advocates a particular line of practice, has published cases ccessfully treated by his plan. No doubt, cases have been red by all or any of the methods recommended. In some in-nces, tinea favosa wears itself out, or rather, as the develop-ent of the frame proceeds, and the constitutional strength im-oves, the conditions necessary for its production and mainten-ce are removed, and it consequently disappears. In every se, however, it must be our object to remove the disease per-nently as soon as possible, and this is only to be done by moving the pathological conditions on which it depends.

For the most part, practitioners have principally trusted to al remedies, and every medical man had his favourite applica-n in such cases. Citron, sulphuric, tar, and iodine ointments, e those most commonly used in this country, all of which, it is ted, are highly successful. No exact results, however, so far

as I am aware, have been arrived at, nor has any particular treatment been tried in Britain on such an extensive scale as to induce any great confidence in its success.

The notion that it originates in the bulbs of the hair caused an attempt to remove the disease by radicating the structures with which it was supposed to be connected. Hence the barbarous and cruel treatment by means of the *Callotte*. A modification of this plan is still extensively practised in Berlin. In Paris this practice has generally been put aside, for the milder and empiric treatment of the frères Mahon. Between the years 1807 and 1813, 439 girls, affected with tinea favosa, were cured by them at the Bureau Central des Hôpitaux, and the mean duration of the treatment was 56 applications. During the same lapse of time, 469 boys were cured, and the mean duration of the treatment was 56 applications. These applications are generally made every other day, so that the average length of treatment by this much boasted and successful method is three months and a-half.

I have endeavoured to show, however, that it is a constitutional disease, and dependent upon the causes which induce scrofulous diseases in general. The treatment, therefore, ought to be constitutional, and directed to remove the tendency to tubercular deposition, on which the malady depends. No doubt, however, a local treament in this, as in all disorders which are at the same time general and local, is of the utmost service.

I consider, then, that the chief indications of treatment are, 1st, To remove the scrofulous disposition; and, 2dly, To employ such topical applications as tend to prevent the development of vegetable life. This line of practice may be thought similar to that recommended long ago by Lorry, who advises, 1st, A modification of the fluids and solids of the economy by a general treatment; 2dly, A vigorous attack upon the local disease by topical applications, capable of removing the crusts, causing the skin to suppurate deeply, and substituting a solid cicatrix for the morbid ulceration of the hairy scalp. For the most part, however, the general treatment of physicians has been confined to diluent drinks, blood-letting, purging, and remedies which depress the vital powers, whereas it must be evident, that if the views of its pathology I have brought forward be correct, and it is in its nature allied to tubercular affections, a treatment exactly opposite ought to be pursued. The development of vegetable life may also be prevented by the application of much milder remedies than the escharotics, or irritating ointments usually employed.

The treatment of scrofula has been fully entered upon by me in another place.[1] Suffice it to say at present, that I endea-

[1] Op. cit.

ıred to show how this peculiar cachexia is caused and kept up some fault in the digestive process; that the blood is secondaıy affected, and its albuminous constituents proportionally inıased; that the albumen at length becomes effused into the ferent structures of the economy, causing the various forms of ›ercular disease; and, lastly, as the albumen in the blood beıes excessive, and its effusion into the textures increases, the ty constituents of the frame diminish. It was shown, by an peal to numerous facts, and the recorded experience of the ıst eminent German practitioners for the last twenty years, ıongst whom may be cited the names of Hüfeland, Schönlein, effenbach, Graefe, Rieke, Rust, Jüngken, Jäger, Chelius, egele, and others, that under such circumstances the internal l external exhibition of cod-liver oil has been attended with › most marked advantage, and often been made the means of ›e when all other remedies had failed. Among other forms of ofulous disease, tinea favosa was particularly alluded to, and ıes cited from Brefeld and Guérand, in which this remedy had ›ceeded in removing it, under peculiarly unfavourable circumnces. The action of the oil appears to be the same in this as other forms of scrofulous disease, and should be given comıed with appropriate diet and exercise, and with reference to › same indications and contra-indications. As these have alıdy been laid before the profession, it is unnecessary for me to ell upon them at present. I shall conclude this paper, therefe, with the particulars of a case which will serve to describe l illustrate the treatment I have found most successful.

John Mackay, aged nine years, only son of a chairwoın who is healthy-looking and robust. The father died five ırs ago, as it is stated, labouring under consumption. The r and his mother have since then frequently changed their reence, and lived in different parts of the town. His nourishnt has principally consisted of porridge, and potatoes, and lk, and this had not always been very abundant. Three years ›re I saw him, an eruption appeared upon his head, which ıdually spread over the scalp. He has been under the care of nerous dispensary practitioners, who have ordered the head be poulticed, and various applications to be made to it, which m the description of the mother, seem chiefly to have been ron ointment, tar ointment, and creasote. When he first ne under my notice last October, the whole scalp was covered h a yellowish-white crust nearly a quarter of an inch thick, › margin of which still presented here and there the rounded m of the favus capsule. It emitted a highly disagreeable smell, ılar to that of mice, and vermin crawled in large numbers r its surface. Examined microscopically, the crusts presented › mycodermatous vegetations in a high state of development.

He complained of intolerable itching and a burning sensation in the scalp, which often obliged him to tear off large masses of the crust, and thus occasion effusion of blood and ulcerations, traces of which could be detected among the crusts. This boy was of a well-marked cachectic constitution, but had never been affected with engorged lymphatic glands. The face and surface generally were of a dirty-yellow colour. The appetite was not good, and he did not eat much. The bowels were irregular; pulse moderate and of good strength. Latterly, he had wasted away rapidly, and appeared to be falling into a state of marasmus. Percussion and auscultation elicited nothing abnormal in the chest. The abdomen was not swollen, and neither by percussion nor palpation could enlargement of the mesenteric glands be detected. His intelligence did not appear great for a boy of his age, and his bodily activity seemed latterly to have been much diminished.

As the appetite was much impaired in this case, I commenced the treatment by ordering him to take, twice-a-day, 15 drops of the Tr. Ferri. mur. in two ounces of Inf. gent. In addition to his usual food, he was to have broth and fish, and I insisted upon his going out in the open air as much as possible. A large poultice, to be changed twice daily, was ordered to the scalp, to remove the crusts. I did not see him again for a week, during which period he followed regularly the advice given. At this time all the crusts were removed, and the scalp presented a clean and bald surface, with here and there patches of erythematous redness containing several pustules of impetigo. As I was at that time making observations on the mode in which the disease commenced, I ordered the poultices to be discontinued. As the appetite was now much improved, and the tongue perfectly clean, I ordered two tablespoonfuls of cod-liver oil to be taken twice a-day. I now saw him every two days. He vomited the first two doses of the oil, and felt considerable nausea after the third, fourth, and fifth. This, however, soon disappeared, and he subsequently took it without repugnance. The disease appeared again on the scalp in eight days, and during the next 48 hours it became pretty thickly sprinkled with sulphur-coloured spots, generally about the size of a pin's head. These presented under the microscope the cylindrical jointed tubes formerly described. I now ordered a poultice to be applied every night, and the scalp to be covered over with the oil three times a-day, by means of a large camel-hair pencil. During the day he was to wear an oil-skin cap. The internal dose of the oil was also increased to three tablespoonfuls twice daily, and in a week subsequently to four tablespoonfuls. He persisted in this treatment for a month, at the end of which time the general appearance had undergone a wonderful improvement. The cachectic aspect, and dirty yellow colour of the skin, had given way to a clear lively colour, and

the cheeks were tinged with the hues of health. The appetite was good; he voluntarily took exercise, and played with his fellows in the streets. The bowels were open regularly, and the tongue clean. I now ventured to see if the disease had been subdued, and ordered the local applications to be discontinued. At the termination of a week, the head was covered with thick scales of desquamated cuticle, and I expected daily to see the appearance of the bright yellow favus capsules. Nothing of the kind, however, occurred, even after waiting another week, and I anticipated that the disease had been radically cured. He continued taking 4 oz. daily of the oil for ten days longer, when it was discontinued. During the ensuing three weeks I saw him from time to time, and had the satisfaction of observing that some of the hairs had escaped destruction, as they were appearing thinly over the scalp, especially posteriorly. At this time he left Edinburgh for Glasgow.

I could readily give more instances where this remedy cured the disease, when numerous others had failed. The utility of any particular plan of treatment, however, can only be tested by trying it on a large scale; hence I have brought it under the consideration of those whose opportunities of meeting with the disease being more extensive than my own, may better enable them to confirm or nullify its value.

EXPLANATION OF THE PLATE.

Fig. 1.—Mode of development, and appearance of the favus capsules; *a* the different stages which the capsule goes through from the time it is first seen until it breaks up; *b* the honey-combed appearance caused by the junction of several capsules; *c* desquamation of the cuticle previous to the appearance of the capsule; *d* large favus capsule which was found on the shoulder; *e* most advanced period, when numerous capsules have been broken up, and form a uniform thick crust.

Fig. 2.—Thin section of a favus capsule, as seen with a magnifying power of 300 diameters; *a* epidermic scales, constituting the periphery of the capsule; *b* finely granular matter lining this, and found between the filaments and sporules; *c* jointed tubes springing from the granular mass; *d* the same tubes larger, more separated, branching dichotomously, and giving off sporules towards their extremities,—fragments of these tubes may also be seen, and numerous sporules loose or collected together; *e* mass of sporules towards the centre of the capsule.

(It is seldom that such a fine view of the plants is obtained as that figured, because, in making the section, it is rare that the cut surface corresponds exactly with the course taken by these vegetations; more generally, therefore, the tubes are cut across, and fragments of them, more or less long, according to circumstances, may be seen floating loose in the field of the microscope. In a hundred sections and demonstrations, such an appearance may probably be met with once or twice.)

Fig. 3.—A small fragment from the centre of the capsule, composed principally of sporules; *a* large sporules distinctly nucleated.

Fig. 4.—Isolated branches, showing the mode in which the branches and sporules are given off.

Fig. 6.—Small portions of the beaded filaments, magnified 800 diameters, showing the molecules occasionally found within them.

PART SECOND.

REVIEWS.

An Investigation of the present Unsatisfactory and Defective State of Vaccination, &c. &c. By THOMAS BROWN, *formerly Medical Practitioner in Musselburgh.* 8vo., pp. 139. Edinburgh: Maclachlan, Stewart, & Co. 1842.

THE small-pox might still be raging as destructively as ever, but that inoculation, at first denounced as the height of wicked presumption, received the patronage of royalty, and was enabled thus to withstand the first efforts made to crush it, and gradually pushed itself into its just position. The same violence and prejudice that opposed inoculation, met vaccination on its introduction, and never was the truth of the saying, "that a prophet has no honour in his own country," better exemplified, than in the case of Jenner. Not that all were insensible to his merit, but that those public bodies who should always be like out-posts in the field of science, the first to welcome those who come with fruits gathered in the vast unknown country that encircles the little island of knowledge—the Royal Societies and the Colleges, lavish of their patronage when not wanted, and when it rather encumbers than assists, found it indecorous to countenance so strange an innovation as that of Jenner. The Royal Society refused his communication on cow-pox, and bid him beware of tarnishing his reputation. The College of Physicians were too tight-laced in their rigid rules of form to admit him—the greatest physician this country has yet seen—as a fellow. The Board of Inoculation doggedly refused to adopt his improvement, at a time when the Spanish government had circumnavigated the globe, to disseminate the antidote to the most wide-spread and destructive plague,—at a time when deputations from the North American Indians had met others from China at the feet of Jenner, to thank their Great Father for the discovery He had enabled him to make—when the name of Jenner was omnipotent, even with Napoleon—when his passport was more respected in Europe than that of any king or emperor:—in short, after he had conquered the world and won its homage, he still found a stubborn band of obstinate enemies at home, whom no amount of evidence could convince—no mildness of his could temper—and as our

author with evident self-complacency reminds us, foremost in this band, stood Mr Thomas Brown. The fact, indeed, might have been forgotten; for, if his letters of that day were no better than those he has just published, they would in all probability have been consigned to oblivion; but that having fixed his barbed arrow in one who must ever live, he has won for himself a certain degree of consequence not perhaps very enviable. This is conferred by a published letter of Jenner's, in which he thus speaks of a newspaper communication of Mr Brown's:—"His letter, under the veil of candour and liberality, is full of fraud and artifice; for he knows that every insinuation and argument has been refuted, both by the first medical characters in Edinburgh and Dublin, and, indeed, by many others," (Baron's Life of Edward Jenner. London, 1838, vol. ii. p. 47.) We shall not venture to characterize the spirit of the letters now before us, but shall content ourselves with making one or two extracts to enable the reader to judge for himself how far advancing years have sobered the judgment and tempered the language of our author.

First, His claim of merit:—

"But this merit (!) at least these letters will establish most distinctly,—the priority and explicitness of my claim of challenging and proving, that the anti-variolous powers of the Jennerian discovery were found to be partial, feeble, and temporary, in a regular medical investigation, upwards of thirty years ago; and that I cannot, and will not tacitly permit any medical practitioner whatever, to come forward and repeat such statements concerning the deficiency of vaccination, without making the smallest allusion to the fact, that they were all distinctly stated by me in that inquiry." Pp. 9, 10.

Second, Horrid spirit of the profession.

"Upon no other occasion, Sir, have the medical profession shown more dogmatism or want of candour; for, although the science of medicine is of difficult and accurate observation, and that a thousand errors may be committed, and thousands of our fellow-creatures may perish without our perception of ignorance or guilt, still these do not afford any satisfactory excuse for our determined and obstinate adherence to maintain the character of vaccination, not only by a total disregard of every adverse fact, however true, and however strong and important; but even with the horrid spirit of treating with contempt any member of the profession who dared to challenge the anti-variolous powers of vaccination." P. 11.

Again, speaking of vaccination, he characterizes it as a practice,

"in which I felt convinced, so many inconsistencies, contradictions, and imperfections existed, and which now stands convicted in the judgment of the whole candid and experienced members of the medical profession, of being unworthy of farther confidence, unless some expedients can be devised which shall remove all the objections the Jennerian discovery is now liable to." Pp. 12, 13.

Our author concludes this dignified epistle by approaching the subject on which it is avowedly written, and proposes a series of

questions regarding the immunity afforded by cow-pox—whether it is permanent or temporary—whether re-vaccination is advisable—and if it is possible to improve cow-pox virus so as to render its effects more permanent.

It would be an abuse of the reader's patience, were we to follow Mr Brown's rambling observations, destitute as they are of plan, and disfigured by the most disparaging observations on Jenner, and all who believe in vaccination. We shall be content with an extract which may serve to expose his conclusions.

"From the whole history, statements, and opinions, concerning the origin and practice of vaccination, it seems proved, that the vaccine does not possess any greater specific or permanent influence over the human body, than what is, and may be possessed, by many other kinds of virus; and also, that many diseases and local affections may, and do possess, such a specific influence against the influence of other diseases, as the vaccine does exert against the contagion of small-pox; and in proportion to the extent of these actions, so may the extent of their power of prevention be calculated. Indeed, there is reason for concluding, that the anti-variolous power of the vaccine, arises more from possessing what may be denominated a sedative power over the human body, than any quality arising, either as being a direct antidote, or possessing a similarity of character to the small-pox." Pp. 46, 47.

Again,

"And such has also been the increase in their severity, that not only now, but for many years past, *the fatal effect of small-pox succeeding to vaccination, actually exceed in the proportion of twenty to one, those which were found to attend the practice of inoculation.* And to all this must be added, the ravages of the epidemic, which now approach very near to what they were before the introduction of the Jennerian practice, and have put an end to the fond hope of destroying the existence of the variolous epidemic.

"It is distinctly ascertained, that the whole of the foregoing conclusions apply and correspond exactly with the accounts received concerning the vaccine practice from every quarter of the world, wherever it has been practised to any extent; and in warm latitudes, more especially, the powers of the vaccine appear to be so feeble and temporary, that the idea of permanent security is not only abandoned, but the practice of vaccination nearly given over.

"It is proved beyond all doubt, that all the excuses for defeating all proof adverse to the absolute security by vaccination against small-pox are miserable and contemptible; not exempting that most false and foolish of all—that the recurrence of a second attack of small-pox are as frequent, and as likely to occur—however severe the first attack may be, as those cases which have succeeded to vaccination." Pp. 48, 49.

So, after all, vaccination turns out also to be a bubble, and Mr Brown has the *merit* (to use his own favourite word) of exposing and bursting it. It is singular, indeed, how mankind can be deluded into the belief that they have got rid of an enemy, which, according to our author, is still, with even more than former malignity, lurking in their bosom. Strange and melancholy infatuation! Mr Brown says, that vaccination is merely a soporific—truly a most effectual one—for it seems to have steeped in

forgetfulness the senses of all who have meddled with it, and robbed them of the power of recognising the horrors of the small-pox. What have we to oppose to these startling statements of Mr Brown? We may state one or two facts which touch each of these heads, and show that, even supposing the immunity derived from vaccination to be very greatly less than that afforded by inoculation, yet the former is infinitely preferable to the latter; that, in fact, inoculation, in the present state of our knowledge, is wholly indefensible, and those who practise or advocate it, are incurring the heavy responsibility of hazarding the lives of thousands to gratify their whim or vanity.

It really requires some power of gravity to sit down at this time of day, to adduce proof in favour of this proposition; it is like attempting to prove a truism, seriously to demonstrate that the small-pox *is* a great evil,—that however men's tastes may differ about beauty, in this they all agree—that it never is enhanced by the scars of the small-pox; and yet the proposition that the cow-pox gives immunity to the small-pox, is about as universally received. But to the proof.

In the investigation of this subject, we require to begin by examining how far small-pox gives immunity to small-pox; and we shall find that this is by no means absolute. There are many examples on record of those pitted with small-pox, who again took the disease, and died in consequence. We shall mention one or two. Mr A. K. Lindsay reports, that a Lissahee who had had small-pox four years previously, which had left distinct marks, took it again in 1830, and died in consequence. (*Calcutta Transactions*, vol. v., p. 405.)

In the very fatal small-pox epidemic which ravaged Norwich in the year 1819, ten cases of secondary small-pox are reported to have occurred. Of these three were fatal. (*Edinburgh Med. and Surg. Journal*, vol. xvii.)

Out of twelve cases of small-pox, related by Dr Samuel Hill, assistant-surgeon to the forces in North Britain, there were—Of the unprotected, 1—affected with distinct variola, 1: vaccinated, 5—modified and mild, 5: who had had small-pox, 5—severe, 4, fatal, 1.

In the Royal Military Asylum at Chelsea, from 1803 to 1833, 26 out of 2532, who had small-pox before, took it over again. Of these 3 died. Dr Thomson (*Historical Sketch of Small-Pox*, 1832, p. 279) mentions having seen 836 cases of small-pox in Edinburgh, out of which number 71 had passed through small-pox previously, and of these 2 died.

It would be very easy to multiply examples, but these are quite enough to prove that small-pox does not give absolute and complete immunity to small-pox. There are not tables sufficiently extensive to determine, with certainty, the comparative

protection afforded by vaccination and inoculation. So much, however, appears made out, that the cases of small-pox which occur after vaccination are not more dangerous—probably they are less dangerous—than those which occur after small-pox. According to the observation of Dr Thomson, while out of 71, who took small-pox a second time, 2 died in consequence; out of 484 who took small-pox after having been vaccinated, only 1 died. We have also the testimony of Dr Baron, whose connection with the small-pox institution gives great weight to any statement he makes, that he never saw but one fatal case of small-pox after vaccination.

Assuming, then, that neither inoculation nor vaccination affords *perfect* security against the small-pox, let us balance the risks and advantages attached to the one against those attending the other, and examine the result. Suppose we admit, which we do in absence of all proof, that the security afforded by inoculation, over that afforded by vaccination, is as twenty to one, let us see how the account would stand; and to determine this, consider the comparative danger of the two methods. First, with respect to the direct dangers of inoculation; according to Dr Brown, the deaths from inoculation are as one in 600; and as this estimate is given by Woodville, (*Reports on Cow-Pox, &c.*, p. 151,) and sanctioned by Williams, (*Elements of Medicine,*) we may adopt it for the basis of our calculation. According to the report of the committee appointed at Paris to investigate the dangers of vaccination, (see *Chappon Traité Historique du Danger de la Vaccine;* also *Sacco Trattato della Vaccinazione,*) it would appear that in all the reputed cases of death from vaccination, there had been complication with other diseases; and admitting all the deaths that followed to be the consequence of the operation, it would give a proportion of deaths as 1 to 54·793, compared with the danger of inoculation as 1 to 81; so that for every individual who has died of vaccination, 81 have died of inoculation. So much then for the direct danger; supposing that inoculation gave 81 times more protection than vaccination, we should not be entitled to adopt it, because we should *certainly* sacrifice as great a number in the application of the remedy as would be exposed to the *chance* of dying from our neglect of it.

Such are some of the direct evils resulting from inoculation, whereas the good of vaccination is unmixed, and affords instances of the perfect disappearance of small-pox for a series of years through its agency. Thus, in Anspach in Bavaria, in the years 1797–98–99, 500 died yearly of small-pox, and in 1800 no less than 1009; whereas, from 1809 to 1818, there was not a single death from that disease, although it prevailed epidemically in the neighbourhood. (*Edin. Med. and Surg. Journal*, vol. xvii.) In Copenhagen, in 12 years before the in-

troduction of vaccination, 5500 persons died of small-pox; from 1802 to 1818, a period of 16 years, after vaccination had been peremptorily insisted on, only 158 died of it over the whole of Denmark. Lezay Manerzia, prefect of the Rhine and Mosel departments, published in his report for 1810, that in his district not a single case of small-pox had occurred since vaccination had become general, and, in consequence, the population had increased to the amount of 9911; in Rouen, the mortality had decreased 500 annually from the effects of vaccination. In the Paris correspondence on vaccination, 5552 cases are related of children who had been vaccinated and afterwards exposed in all possible ways to the contagion of small-pox with perfect impunity; in Glasgow 15,500 had been vaccinated, and during ten years previous to the time the report was made, no individual of that number had been affected with small-pox. Let us remember that had these children been inoculated, *twenty-five* of them would have died in consequence of the inoculation alone. Nevertheless, according to Mr Brown, "it cannot be expected that reasonable beings shall continue to have confidence in a practice which has proved completely ineffectual for the purposes it was intended to accomplish!"

Let us now consider the indirect dangers of inoculation. Very frequently inoculators have introduced this terrible plague into districts before free from it, and the consequences have been such as should terrify any one not so wedded to a preconceived opinion as to be blind to the scenes of death his criminal persistence in error had occasioned. From the account of the Norwich epidemic, it appears that four out of five parishes in that neighbourhood were indebted for small-pox to irregular practitioners who went about inoculating. From the foci of disease which these misguided men introduced, the plague spread like wildfire in all directions, and destroyed 530 out of 3000 who were not protected, and yet Mr Brown can seriously recommend the practice! We have lunatic asylums to restrain the mad from mischief,—we have lazarettos to confine the bearers of the plague,—is there no restraint for the spreaders of a malady, which, if not quite so often attended by death as the scourge of the east, is even more loathsome, and sometimes leaves its victims who escape death to envy those who die? Indeed, when we observe the beneficial results that have followed despotic measures for the enforcement of vaccination, as in the case of Denmark, Bavaria, and Russia, we almost regret that similar steps have not been taken by the government at home; but it is the peculiar privilege of an Englishman to go to destruction in his own way, and nobody has a right to interfere.

We conclude then, *first*, that even did inoculation afford eighty times more security than vaccination, the certain and direct

dangers flowing from it are so great as to render the practice quite unwarrantable; and, *second*, that even were the direct dangers comparatively trifling, yet the possible and indirect mischief attending it would of itself be sufficient to condemn the practice.

The third letter contains some valuable precautions to be attended to in vaccinating, valuable, not from their novelty, but from being the result of the author's own experience, which, in this case, corroborates that of others. In this letter are also detailed some experiments, showing the mutual influence of vaccine and variolous virus simultaneously introduced into the system. The results coincide with those obtained by Dr Woodville, and other experimenters.

The letter terminates by jumping at certain conclusions which never could have been suggested by its simple perusal. The most important is, that the efficacy of vaccination is not permanent; another is, that if we divide society into six classes, three-fourths of the three lowest (or about a third of the total population) will be found to have undergone the small-pox before they reach the age of twelve years. This latter assertion we dismiss with a simple denial and a demand for proof, for surely Dr Brown, himself so averse "*jurare in verba magistri*," cannot expect that we are to take his opinions on trust, opposed, as they are, to the universal belief of others, unless he gives us a specimen at least of the facts from which they are derived.

The former proposition, however, is not so easily dealt with, as in it we have to do, in a great measure, with negative evidence, which is always more fallacious and more difficult to estimate than positive. The question is, To what period is the immunity afforded by vaccination extended? At the outset we are met by the same difficulty we had before to encounter—What is the immunity afforded by vaccination? Out of 100,000 vaccinated persons, how many are liable to be affected with small-pox? On this subject the evidence is conflicting and unsatisfactory in the highest degree. We find, for instance, that Miss Bailey, a zealous vaccinator, offered a reward of five shillings to every one who could produce an instance of small-pox after vaccination, and out of 2600 cases, only one claimed the reward; and we have the 5552 cases of vaccinated children in Paris, and the 50,500 in Glasgow, exposed to small-pox without one being affected with the disease. We find, on the other hand, Mr Cross of Norwich concluding, from extensive experience, that about one in fifty may be susceptible of modified small-pox (*Edin. Med. and Surg. Jour.*, vol. xvii.), and it appears from a report on the effect of vaccination, as performed in the Prussian army, that out of 42,041 vaccinated, 31 took small-pox, giving a proportion of 1 to 1374 (*Kleinert's Repertorium*, 1840.) There is no doubt that a

iderable number are capable of taking vaccinia over again.
)m the last named report, it appears that out of these
rho had been vaccinated, 33,819 had distinct cicatrices,
listinct, and 2577 none at all. When all were revaccina-
4,252 it produced no effect, in 19,117 it ran its ordinary
nd in 8672 it was irregular. Whether all those in whom
ion took effect would have been susceptible of either the
n or infection of small-pox, it is impossible, with cer-
o say; but it seems highly improbable. In the report
l by the managers of the vaccine establishment at
(*Die anomalien der Schutz-pocken, von M. Viszanik und*
ihner,) although tables are not given, it is mentioned
r, that the numbers re-vaccinated with success was great,
report recommends, "when small-pox rage, it is well to
iate all who are exposed to the contagion." When we
that vaccination is attended by no danger and small
rt, the propriety of adopting it in every case of unusual
) to small-pox, must, we think, be admitted by all; and
onableness of the measure is shown by the fact, that the
tal cases of small-pox that occurred in the Prussian army
among those who had not been re-vaccinated, in all of
ie disease occurred in its mildest form.

onclude, then, that in absence of sufficient evidence to de-
the permanent or transitory character of the effects of
ion, it is safer practically, although perhaps not so philo-
onsidering the matter analogically, to adopt our author's
the more or less insufficient nature of the protection af-
y vaccination after the lapse of years, while, at the same
ere is no ground whatever for his dogmatical assertions
)mplete evanescence of the protective influence after five,
)ther limited number of years.

are inclined fully to agree with the opinion of our
expressed in the fifth letter, that there is no degenera-
the vaccine through repeated use. We adopt this
first, Because there is no positive evidence for such de-
on; *second*, Because it is against all analogy with other
is diseases, such as syphilis, itch, &c., that it should
generated; *third*, Because if its degeneration be the
consequence of transmission, it must have been mani-
)ng ago, for soon after the introduction of the process,
ndred thousands were inoculated from one source, and
lifference between the first and last vaccinated was ob-
, and equal protection was afforded to all; *fourth*, The
ice of cases of small-pox among those vaccinated when a
)x epidemic is raging, seems to depend, as Dr Thomson
, more upon the extreme severity of the small-pox than
e degeneration of the vaccine, because when such cases

are met with, they occur also in those who have had small-pox, which no one imagines to have degenerated.

On this subject there are some very interesting observations by Drs Viszanik and Zöhner. Having procured some vaccine matter from a cow, they applied it to a child, and observed the difference between the appearance of the eruption so produced, from that arising from the application of ordinary vaccine lymph. They found that the swelling and inflammation were considerably greater in a child thus vaccinated; and when they vaccinated other children from this child, the peculiar appearances gradually disappeared, and soon the eruption assumed a perfect similarity with that commonly observed. Hence they were of opinion, that vaccination as it occurs in man, is different from the disease of the cow; that it is naturalized, as it were, and assumes certain characters, which, though they indicate difference, by no means indicate degeneration, for the humanized vaccine has the power of producing a disease similar to itself, *and which gives immunity to small-pox*, as certainly as the vaccine virus from the cow produces the modified disease in man. The fact of vaccine matter producing a spurious eruption in India, may be much better explained, by supposing that a chemical decomposition of the virus had taken place, than that there had been what is properly called a degeneration of that, because the effects produced were much more analogous to those of corrupted animal substances, than of specific animal poisons; and also because this spurious eruption was not gradually developed by the transmission of the disease through a number of persons, but rather spread rapidly from a common source.

After having noticed the three grand practical questions—the value of vaccination—the propriety of revaccination—and the non-degeneration of the vaccine virus—it only remains, before concluding the practical part, to say a few words on the means of ascertaining good lymph, and the genuine vaccine eruption. The chief thing to be attended to in the selection of the lymph, is that it should be taken at an early period of the disease, and that it should be tenacious and clear. The characters of the true vaccine eruption are very well described by our author, who observes,

"If, upon the introduction of vaccine virus, a vesicle is produced, and followed with more or less of a circular inflammation, and this continued for two or three days, with or without any symptoms of constitutional derangement, we may conclude that the vaccine process has exerted every effect upon the human body it is capable of; and, if the vesicle should remain whole, afterwards form a dark-coloured scab or crust, which in a week or two drops off, and leaves a scar or cicatrix, we may consider the disease has run its proper and natural course. And when the tests of inoculation with small-pox, or exposure to the epidemic disease, are afterwards employed, the individual is found to resist both." P. 40.

The next question of interest that meets us, is whether vacci-

ation and small-pox be identical, or the one only a modification f the other. Our author, indeed, disposes of this in a most ummary way, with a few hard epithets about its being ridiculous and absurd, &c. Such terms being the usual weapons of gnorance against truth, their weight in a scientific inquiry, if ndeed they have any, is always in favour of the party attacked, ecause they are seldom had recourse to, except in absence of etter.

There can be no doubt of the identity of two diseases, if both rise from the same specific virus, and the one passes by insenible gradations into the other. Let us consider what proof we ave of small-pox virus—which every one admits to be capable f producing small-pox—being also able to give rise to cow-pox.

The experiments of Mr Ceely, which to the refined taste of Mr Brown, appear "disgusting," seem to have been performed with he same cautious spirit of investigation that distinguished those f Jenner, with whom indeed, if one may judge from that appearnce of patient and mature thought observable in his writings, nd that modesty, so characteristic of a true philosopher, which orbids him rashly to draw conclusions, or construct theories, Mr eely bears a close resemblance. In the last number of the *Transactions of the Provincial Association*, vol. x., this accurate bserver relates a most remarkable example of five out of eight ows which had been exposed to the contagion of small-pox, ecoming affected with cow-pox. The circumstances are these: —A very virulent epidemic of small-pox occurred at Oakley n the vale of Aylesbury. The bed on which one of those who ied had lain, was hung up on the hedge of a field, into which hese eight cows were driven for some days consecutively. The whole five became affected with cow-pox simultaneously, nd it did not prevail in the district at the time. Now, it is bserved, that when cow-pox appears in a farm, it almost ever affects more than one cow at a time, and then it preads slowly from one to another; so that its simultaneous ccurrence in this instance, affords a very strong presumptive vidence of its arising from some common cause; and that this ause was confined to this particular field, was obvious from he other cows on the farm not having been affected. Therefore until we can find a more probable cause than small-pox mism, we may assume that it may have been this, and wait for rther evidence to settle the point. We shall find, however, hat the presumption is greatly strengthened by the other evilence in favour of the identity of the two diseases.

Mr Ceely made a series of experiments, which were published n *Trans. of Medical and Surgical Association*, vol. viii. 1840, by hich he most conclusively proves, that matter taken from smallox pustules is capable of producing a vesicular eruption in the

cow, resembling cow-pox, and that lymph taken from this, excites, when applied to man, the true vaccine vesicle. He had before proved, that a similar eruption was excitable in the cow, by the application of the lymph taken from a vaccine vesicle, such lymph as is in common use for the purpose of vaccination. We find, then, that the matter of small-pox, and the lymph of cow-pox, both excite the same disease in the cow, and that the matter of small-pox gives rise, after being modified by the cow, to the true vaccine in man. Can we have stronger evidence of the fundamental identity of the two diseases? The experiments of Mr Ceely are corroborated by those of Dr Basil Thiele of Kusan, Russia, who produced true vaccinia, by inoculating cows with small-pox virus; and from the cow-pox so produced, he again produced true vaccinia in man. A still further confirmation is afforded by some experiments of the same ingenious investigator. He found, that by keeping the lymph from small-pox for ten days, between pieces of glass, and then diluting it with warm milk, it became so far modified in its nature, as to produce a much milder disease than the ordinary small-pox virus. Inoculation with matter so prepared, produces large pustules, and the common vaccine fever appears twice, first, between the third and fourth day, and afterwards more severely between the eleventh and fourteenth. When the process is repeated upon ten or twelve different persons, inoculating one from the other, the eruption gradually assumes the character of true vaccinia, and at length is not to be distinguished from it. Dr Thiele's observations were taken from experiments on about 3000 persons, (vide *Zeitschrift für die arznei-kunde*, 19 *Jahrgang; Viertel jahr-heft*, 15 *bogen*; also *Kleinert's Repertorium*, *November* 1839, p. 1.) These observations are further interesting, as countenancing the opinion that the cow-pox in man is so far an independent disease—a naturalised cow-pox, different in some respects, but fundamentally identical with both the cow-pox of the cow, and the unmodified small-pox of the human race. The observation of Mr Ceely, that lymph taken from the vesicles of the cow at a proper stage, and possessing all the characteristics of perfection, very frequently failed to produce vaccinia in those who were immediately afterwards successfully vaccinated with dry or liquid lymph that had been long current in man, is also in favour of this opinion. We are entitled, then, to believe, that small-pox introduced either by contagion or by infection, is capable of producing vaccinia; and we shall find many examples on record, which our limits do not permit us to detail, in which vaccination produced a severer disease than it usually does, attended with numerous pustules, to the amount of 50 or 60, and a secondary fever—a disease, in short, which it is not easy to distinguish from mild small-pox. So that we find cow-pox pro-

duced by small-pox, and again small-pox, or something extremely like it, produced by cow-pox; and surely two diseases capable of reciprocal production, must be essentially identical.

Another subject of great interest connected with vaccination, is the effect of certain diseases in modifying or preventing it, and the effect it seems to have upon other diseases. It is found, that when there is much weakness of the constitution, when the skin is covered with scales, and when diarrhœa is present, the vaccine pustule seldom arrives at maturity, and does not present the characteristic features. Diarrhœa is often combined with affections of the mouth, and these seem to exert a specially injurious influence upon the vaccine process, so that vaccination should not be undertaken until these have wholly disappeared. Another combination which gives rise to spurious vaccine pustules, and one which is often very troublesome, is itch. A few days after vaccination, a small itchy vesicle is formed, which soon fills with pus, and gives rise to an irresistible desire to scratch. The pustule is surrounded with a lively red margin, and the axillary glands swell. The spot becomes dry and inflamed, and a wandering erysipelas often spreads from it in all directions. Such an affection usually arises in those who have been vaccinated from a child affected with itch; and it seems probable that it is the consequence of taking lymph impregnated with the virus of the itch. (*Vide Die Anomalien der Schutz-pocken, &c.* p. 33.) This latter observation is particularly interesting in our present state of ignorance as to the nature of itch, and whether the contagion is *always* communicated by the itch-insect; and it is opposed to the observation of some experimenters, (*vide* Köhle's *Med. Vereinszeitung*, 1836, No. 9, p. 41; also Henle's *Pathologische untersuchungen*,) that inoculation with the matter of itch does not produce itch.

Among the diseases which may be suspended by vaccination, we find hooping-cough and scarlet fever. (Adams on *Morbid Poisons*.) We are told by Baron Larry, that the plague rarely attacked those who had undergone small-pox; and if vaccinia and variola are identical, perhaps the former may likewise give a certain immunity to the plague. Dr Sacco of Milan treated paralysis of the lower extremities successfully by exciting thirty or forty vaccine vesicles. Numerous observers have noticed crusta lactea and herpetic eruptions cured by vaccination. It has also been observed by a number of experimenters to cure chronic ophthalmia and some scrofulous affections. Indeed, Dr Cavon of Annecy (Depart. of Mont Blanc) remarked, that scrofula had decidedly decreased since the introduction of vaccination. This observation has been made elsewhere. Vaccination has been successfully employed against tænia capitis, and convulsions of various kinds. Intermittent fevers of long stand-

ing are said to have been arrested by it; and this has occurred in the experience of ten different observers. Various other diseases are reported as having been cured by vaccination. Those we have mentioned, however, have all been observed by numerous and respectable practitioners, and the cases are circumstantially narrated. These, and many other cases, are mentioned in a memoir read before the French Institute, by MM. Berthollet, Percy, and Hallé, in 1812. (See *Hufeland's Journal*, vol. xxxvi. p. 110.)

Opposed to these observations, it is right to mention, that the writers of the report of the Vienna Vaccine Institution observe, "We have frequently had occasion to vaccinate those afflicted with herpetic eruptions and chronic scrofulous opthalmia, in hopes that the vaccination might exert a salutary influence upon these obstinate diseases; but we have found that large boils were the consequence, without its improving the disease at all; on the contrary, it appears to us as if the diseases which slumbered in the organism were excited to more immediate activity by inoculation." This is a matter of such importance, that we hope it may attract more attention in future; and we have alluded to it here more from a wish to excite interest, than with the hopes of communicating information. The subject is quite overlooked by our author, who is far too intent on exposing the personal affront he received from the National Vaccination Board, to bestow any attention on such insignificant trifles.

In conclusion, we thank Mr Brown for calling public attention to a subject of such paramount moment to the community, as well as of deep interest to science, as vaccination must always be; and while we utterly dissent from him in almost every conclusion he arrives at, and condemn most strongly the coarse and unscientific style in which he indulges, we trust his publication may be useful, by stirring up to greater exertions those whose duty it is thoroughly to understand and defend the system they practise.

Mr Brown may be assured, that although a Voltaire could write down a ministry, it is not for *him* to write down vaccination; and if he has no better claim to the sympathy and indulgence of the public than his having been among the most vehement opposers of vaccination in its infancy, it would become him to be especially on his guard to avoid every thing that has the appearance of personal pique or petulance, lest the opposition in which he glories, be ascribed, not to an anxious desire of vindicating truth, but to a wish of gratifying his galled vanity, by assuming a position which, from its singularity, must attract some share of public attention. As he cannot be Jenner, it may seem to him the next best thing to be Jenner's adversary; by assuming a proud tone and high air, and attacking Jenner in his most offensive

style, he may hope to have his name coupled with the name of that great man, and thus borrow a lustre from the luminary he attempts to obscure. His hopes are, we think, delusive. A transient notoriety he may attain—lasting celebrity, such a position as he has taken, never can bestow. Napoleon will be remembered long after the brawling Sir Hudson Low has been permitted to creep into that oblivion which is his reward as well as destiny;—and so will the name of Jenner be blessed in the uttermost parts of the globe, when his detractors have passed into utter forgetfulness!

Elements of General Pathology. By the late JOHN FLETCHER, M.D. *Edited by* JOHN J. DRYSDALE, M.D., *and* JOHN R. RUSSELL, M.D. Pp. 519. Edinburgh: Maclachlan, Stewart, & Co. 1842.

We have read this work with interest and profit; and notwithstanding that it contains some doctrines which appear to us visionary in the extreme, we must recommend it to our readers as well worthy of their perusal. The theories, whatever may be said of their truth, are ingeniously defended; and throughout, the writing of the author and his editors is characterized by great talent and erudition.

The book is divided into three parts:—the first treating of etiology; the second, of semeiology; and the third, of therapeutics. In each of these departments there is a great mass of information brought forward.

The 1st and 2d chapters, along with other interesting matter, contain some curious and important statistics, bearing upon the influence of age, sex, climate, diet, habit of body, &c., as predisposing and exciting causes of disease.

Great Britain, "in spite of its fogs and vicissitudes, so fertile a subject for the misanthrope," is correctly stated to be the most healthy country in the world; and in proof of this statement of Dr Fletcher, the editors give the following table from Bernouilli.

"Mortality of different countries.

In Spain and Portugal,	1 in 40	die annually.
Italy, Greece, and Turkey,	1 in 30	—
Prussia,	1 in 34·39	—
Bohemia,	1 in 34·1	—
Switzerland,	1 in 39·8	—
Russia,	1 in 32.?	—
England,	about 1 in 43·7	—"

P. 6.

The mortality of cities is, in general, found to be greater than that of the country, but from this rule there are some exceptions.

"It is true that the mortality of cities is greater than that of the country; thus,—

Great Britain,	60	London,	40
France,	40	Paris,	32
Austria,	28	Vienna,	22
Holland,	40	Amsterdam,	24

"But there are some strong facts on the other side. Thus, the mortality of Berlin is not greater than that of Prussia in general; and that of Manchester, the second largest town in England, so far from being greater, is considerably less (not more than 1 in 74)." P. 28.

In connection with the above, the following note is subjoined.

"The comparative mortality of different professions, some requiring a residence in town, others in the country, may be learned from the following. (Taken from Bernouilli, op. cit.)

	Out of 100 who died of a natural death,			
Of clergy,	42	were above 70,—	14	above 80 years old.
— landed gentry,	40	—	14	—
— men in public offices, *(hoch beamten.)*	35	—	13	—
— merchants,	35	—	8	—
— military,	32	—	13	—
— artists,	28	—	7	—
— teachers,	27	—	8	—
— physicians,	24	—	6	—

"Although the appearance of cotton-spinners, &c. is unhealthy, yet there is comparatively little disease among them. Of 837, whose average age was 32½, 621, or three-fourths, were perfectly well.—EDITORS.

"In like manner, it is the most common of all possible whims, to represent studious persons as not only exposed to all sorts of disorders, but as very short-lived. But the records of Academies, as well remarked by Alibert, sufficiently demonstrate that there are few classes of men who live to a greater age than philosophers. Nor is it at all incompatible with this fact, that, as observed by Vogel, 'their faces are generally like triangles, their limbs of oaten straws, their hearts of butter, their stomachs as weak as blotting paper, and their body flaccid, feeble, and marrowless.' It has been found lately, that the average age of 152 men of science and literature of France, taken at random, was 69 years; and of 20 literary ladies living in this country during last century, the average was 71½ years. (Quarterly Review, No. 99."—Pp. 28, 29.

We have marked several passages giving a better idea of the work; but these, with a few remarks, we defer till another occasion.

(To be continued.)

1. *The Elements of Materia Medica and Therapeutics.* *By* JONATHAN PEREIRA, M.D., F.R.S., and L.S. Second Edition. 2 vols. 8vo, pp. 1926. London: Longman & Co. 1842.
2. *A Dispensatory or Commentary on the Pharmacopœias of Great Britain; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica.* *By* ROBERT CHRISTISON, M.D., F.R.S.E., *Professor of Materia Medica in the University of Edinburgh*, &c. 8vo, pp. 978. Edinburgh: A. and C. Black. 1842.
3. *Elements of Materia Medica and Pharmacy.* *By* O'BRIEN BELLINGHAM, M.D., &c. *Edited by* ARTHUR MITCHELL, M.D. Part 1. 8vo, pp. 302. Dublin: Fannin & Co. 1842.

No one who wishes to make himself acquainted with the Materia Medica need be in want of an English book on the subject. Besides many others of acknowledged value, which have been known to the profession for years, we have here no less than three which have issued from the press within the last few months. Of these, one is a second edition of a work in two volumes, which was reviewed in the first number of this Journal. The next is a recently published Dispensatory, complete in one volume. The third is the first part of a systematic work, not yet completed. One is English, one is Scotch, and one Irish. It is not our intention to institute a close comparison of these works; we wish, however, to lay before our readers what we consider to be the characteristic features of each.

The first on our list is Dr Pereira's Elements of Materia Medica and Therapeutics. The rapid sale of the first edition is the best evidence which can be adduced as to its popularity with the profession. For the general characters of the work, we refer to our formerly expressed opinion, (January 1841, p. 33). We then stated, as a decided objection to the work, its containing many things that were unnecessary, which increased its bulk and expense without enhancing its value; but at the same time we expressed our belief that the amount of useful matter which it contained rendered it a desirable book. Our opinion of the Elements is considerably modified by an inspection of the second edition. While we wish that something could have been left out, to obviate its price being raised so high as L.2, 10s., we must own that the greater part of what has been added is really useful, and it is but justice to Dr Pereira's good sense to say that he seems, in several instances, to have withdrawn, in compliance with the suggestions of his reviewers, some of those appendages which, from their inutility, were most objectionable; we must

say, however, that there is room for a little further use of the pruning knife.

The additions which have been made, and which have increased the bulk of these volumes by nearly five hundred pages, will be best made known by the following extract from his preface:

"Among the additions will be found articles on *Mental Impressions*, *Light*, *Heat*, *Cold*, *Electricity*, *Magnetism*, *Diet*, *Climate*, and *Exercise*, considered as therapeutic agents. The processes of the British Pharmacopœias, including those of the new Edinburgh one, have been described in a more detailed manner. Upwards of a hundred woodcuts have been added. They comprise figures of crystals, and some insects used in medicine, microscopic views of amylaceous grains of commerce, and illustrations of chemical manufactures, and of the modes of preparing some vegetable products."

Of these additions, some of the most interesting, are the diagramatic drawings illustrative of chemical manufactures; which, being carried on chiefly in or near London or other large towns, though their general principles are familiar to all, are in their details unknown. Dr Pereira's diligence in collecting these is most praiseworthy. In fact, diligence, laborious study, and industrious collection of facts are Dr Pereira's great merits as an author. In subjects regarding which new investigations have recently been made, we find that the information is brought down to the latest period. We therefore consider Dr Pereira's second edition as an elementary treatise complete up to the present time, embracing a full view of all that is known on the subject of the materia medica, and deserving, as we are sure it will obtain, a place on the shelves of every well assorted medical library.

Of the new chapters in the present volume we would select that on *Diet* as a good illustration of the assiduity with which the author has laboured to make the new edition as complete a treatise as possible: and as an example of his method of treating this subject, we extract the section on milk.

"MILK.—Properly speaking, milk should be considered among drinks; but, as it contains a large quantity of alimentary matter, and, furthermore, as it yields some solid foods (butter and cheese), it will be most convenient to consider it here. The composition of several kinds of milk is thus stated by MM. O. Henry and Chevallier:—

	Milk of the				
Constituents.	Cow.	Ass.	Woman.	Goat.	Ewe.
Caseum,	4·48	1·82	1·52	4·02	4·50
Butter,	3·13	0·11	3·55	3·32	4·20
Sugar of Milk,	4·77	6·08	6·50	5·28	5·00
Various Salts,	0·60	0·34	0·45	0·58	0·68
Water,	87·02	91.65	87·98	86·80	85·62
Total,	100·00	100·00	100·00	100·00	100·00
Solid substances,	12·98	8·35	13·00	13·20	14·38

"The nutritive principles of milk are (excluding water), caseum, butter,

id sugar of milk. Perhaps the phosphate of lime found in milk, ought to e considered as an aliment for young animals; inasmuch as it is necessary the development of their osseous system. For the most part milk is adily digestible; but, with adults, this is by no means universally the se. With some dyspeptics, it proves heavy and difficult of digestion. I nd that those with whom it disagrees are obnoxious to the use of butter; hence I infer, that the injurious qualities of milk are ascribable to the oily nstituent; and, with such patients, ass's milk (which contains little utter) usually agrees.

"The quantity of nutritive matter contained in milk, varies not only with e species, but with the individual,—nay, with the same individual under ifferent circumstances. The quality of the milk is affected by constitution, ge, food, period after parturition, mental emotion, disease, the use of medines, &c.

"Dr Young found, that a bitch fed on vegetable aliment yielded an cescent and spontaneously coagulable milk; but, when animal food was abstituted, the milk became alkaline, and did not spontaneously coagulate.

"Dr Cullen says, 'I allege it to be a matter of experience, that supposing he quantity of liquid to be the same, nurses living entirely, or for the reater part upon vegetable aliment, afford a greater quantity of milk, and f a more proper quality, than nurses living upon much animal food. This venture to assert from the observations of fifty years.'

"The influence which many medicines, taken by the mother, have over he sucking infant, is a circumstance known to every nurse, though Cullen enies it. We can modify the *colour* of the milk by mixing saffron or addder with the food; the *odour* may be affected by various cruciferous nd alliaceous plants; the *taste* may be altered by the use of bitters, as wormood; and lastly, the *medicinal effect* may be also influenced. Children ay be salivated by sucking nurses under the influence of mercury, or urged by the exhibition of drastics, or narcotised by the administration of piates to the nurse. These facts are so familiar to every one, that further vidence of them is scarcely requisite. It is curious, however, that Simon iled to recognise in the milk various salts, which were taken by the outh, and were found in abundance in the urine. Mental emotions also ffect the quality of the milk. I have frequently seen the bowels of the child isordered in consequence of some sudden emotion on the part of the mother. t is also not improbable that diseased conditions of the parent may render the ilk unhealthy. Labillardière states that the milk of a cow, affected with a ind of tuberculous phthisis (*prommelière*), contained seven times more phosphate of lime than usual. Dupuy also speaks of the large quantity of calcareus matter in the milk of cows, in whose lungs abundant deposits of the ame substance were found. Other morbid changes in the milk have been bserved by Donné, Robiquet, and Lassaigne. The facts now mentioned re of the greatest moment, not only in reference to the frequency of disease in cows, and, therefore, to the possible morbific character of their milk, ut they are of considerable importance in reference to the milk of the uman subject. I think, with this statement before us, it is highly improper to allow a female, with any trace or suspicion of tuberculous disease, to uckle. Not that a few grains, more or less, of phosphate of lime in the ilk can probably do any injury to the child; but the fact once established, that the milk may be thus altered by disease, leads to the suspicion hat some other substances not yet recognised by their physical or chemical haracters, may be in the milk of diseased nurses, and which may have an njurious influence on the child; and the suspicion does not confine itself to hose affected with tuberculous diseases; other hereditary or constitutional ffections may also be attended with altered conditions of the milk. This uspicion is strengthened by the common observation, that the milk of urses will not equally suit different children. A child quite healthy and

in good condition will sometimes, without any evident disease, fall off and get into what is commonly called a bad condition, apparently from a change of the nurse. I am aware that we cannot always refer this to any positively hurtful matter in the milk. The quantity of nutritive matter in the same quantity of milk of two nurses, may be very different; according to Payen, milk with too much nutritive matter in it may disagree with the child. Another point worthy of attention is the quantity of milk yielded in a given time. Payen says it varies in different women as much as from one to ten and a half in the same time." Vol. i. pp. 57–59.

With this extract we take our leave of Dr Pereira, congratulating him on the well-merited success which, notwithstanding some imperfections, attended the publication of his first edition; and recommending all who wish for full instruction in Materia Medica, to purchase and peruse these volumes.

Of the second work on our list,—Dr Christison's Dispensatory,—we have already, from a rapid inspection, expressed our opinion, that it is " the most accurate, the best arranged, and cheapest work of the kind" with which we are acquainted, and a more attentive perusal has confirmed our opinion. We expected an excellent work, when we knew that Dr Christison had a Dispensatory in the press; but on perusal of it, we have been enabled entirely to discard our anticipations, and to derive our opinions of its value solely from experience of its excellence.

We beg those who are in doubt as to ' which is the best book to get on materia medica,' to bear in mind, that Dr Christison's work is not a system of materia medica, but a Dispensatory, *i.e.* as the title-page bears, a Commentary on the Pharmacopœias of Great Britain. It contains a history, only of those articles which are recognised by the London, Edinburgh, and Dublin Colleges, and whoever wishes for information of a more extended kind must look for it elsewhere. Being, however, the production of an author who combines the qualifications of an expert pharmacologist and chemist, with those of an accomplished physician, it contains what is amply sufficient for the instruction of students, and for the guidance of most practitioners. We confidently recommend it as a most eligible investment, for the moderate sum of eighteen shillings.

The characteristic features of this volume are, brevity without any unnecessary or inconvenient curtailment, conciseness without obscurity, and, above all, most admirable arrangement. The inconveniences attending the order followed by the late learned and estimable Dr Duncan, in his well-known Dispensatory, have been entirely got rid of by the *lucidus ordo* of Dr Christison. We have no need here of searching for carbonate of potash as an article of commerce in one part, and then turning over two or three hundred pages to find the methods of purifying and administering it in another. The whole that is to be said about

r one substance is to be found collected together, and, what is rticularly useful to practical men, the officinal preparations m the different pharmacopœias are placed in order at the head each separate article. By this excellent arrangement we have once an easy reference to the whole commercial, pharmaceuti-, and therapeutical history of every medicinal agent recognised Britain. Dr Christison has wisely omitted that part of Dr ncan's and other Dispensatories, entitled, *Elements of Phar-cy*, from a wholesome conviction, that a "treatise of the kind, order to be useful, must be far more comprehensive in its de-ls than has been felt by prior authors to be compatible with e limits of a Dispensatory for the ready reference of practi-ners and druggists;" and he has substituted for it, in the form an introduction, "only a few commentaries on the general ads under which the preparations of the materia medica have en arranged by the three Colleges of the British empire, in ir respective pharmacopœias." This, as well as some other rts of the volume, is illustrated by a few well-selected and well-ecuted wood-cuts.

Dr Christison's method of treating his subject is the following. e officinal designation and definition of the substance are first en; then the tests for its purity from the Edinburgh and Lon-n pharmacopœias; next the various officinal preparations, with e processes at full length; a copious list of synonyms, in dif-ent languages, and, in the case of plants, references to figures the species. The special details of each substance are arranged der the following heads:—1st, A brief historical notice of its roduction into medical practice; 2d, Its natural and chemical story,—these being incorporated in the case of minerals, but ated separately in the instance of vegetable remedies; 3d, Its ysiological actions and therapeutical uses; and lastly, The es of the substance, and its preparations.

Dr Christison has, to our mind, evinced much sound judgment the selection of those points of natural or chemical history ich he has introduced into his work. In the majority of in-nces, he does not aspire to that minuteness of detail which is be found in systematic treatises on Materia Medica, as for ex-ple, in Dr Pereira's excellent volumes, but where he judges e natural history to bear an important relation to the medicinal lue, he occasionally enlarges a little, and furnishes us with me important and interesting details. We quote, as illustra-n, the following account of the growth of the colchicum bulb, ich is better given here than in any English work with which are acquainted.

"Let the bulb be supposed to be in a state of full perfection, which will ently be seen to occur in the course of June or early in July. Soon erwards, sometimes even in the end of June, a new bulb, about the size

of a grain of wheat, will be found at the lower end of the old one, close to its junction with the radicals or root proper. This little bulb increases rapidly, and at the same time begins to send up a flowering stem without leaves. At length, towards the close of autumn, a long, naked, lilac or purplish, crocus-like flower springs from the ground, still without any leaves. The germen at this time remains at the bottom of the long tube of the corolla, under ground; and it continues there till the month of January or February, when at length the leaves for the first time show themselves above ground, and rising, like a bunch of tulip leaves, elevate along with them the germen, consisting of three many-seeded capsules, which ripen their seed about midsummer. After this the herb speedily dies and withers. While the flower is rising in the autumn, the bulb forming its lower end is little larger than the diameter of the flower-stalk, of which it appears a mere dilatation; but it grows rapidly during the winter. In April it is as big as a chestnut, and in July it attains its greatest magnitude, being about the size of a small apricot. At this period in its growth, when it is a twelvemonth old, and the herb proceeding from it has ripened its seed and is withering, a new bulb begins to appear from its lower end, close to the root proper; and this produces in the autumn a flower, and in spring a bunch of leaves, like its parent bulb before it. The parent bulb, meanwhile, as the new flower rises, gradually becomes more spongy and watery, yet retains its size and form till next April, the second spring of its own existence. But after this it quickly decays; so that by the end of May it consists of a shrivelled leathery substance, attached by a broad thin membranous band to the lower part of its progeny, now developed into a perfect bulb about the size of a chestnut. The bulb, whose progress has thus been traced, is therefore biennial, or, according to the views of some, triennial; it sees a part of three successive years, but outlives only two revolutions of each season. The plant also propagates itself by the seeds, which ripen in the south of England. I am unacquainted with the progress observed by seedling plants. In this part of the country, where the seed seldom comes to maturity, propagation takes place very differently, namely, by immature or infant bulbs being thrown off from the large bulb during the second or last spring of its existence. In January or February subsequent to the summer in which the plant ripens, or ought to ripen, its seed, and when the herb has for some months died off entirely, a little depression forms on the side of the bulb near the decayed remains of the leaves. Gradually a little oval corpuscle forms on this depression, while at the same time a little tongue-shaped membrane rises vertically behind it like an open lid. The corpuscle soon shoots out radicles at the lower end, and long slender leaves at the upper extremity, which appear above ground in March or April; a small conical bulb is also formed where the radicals and leaves meet, but at the side of the junction, and about the size of a lemon-seed: and soon afterwards this immature bulb, with its plant, detaches itself from the parent, and may be found entangled among its radicals. Several such bulbs seem to be formed from one parent, and two may be occasionally seen at one time adhering to it, and in different stages of their progress. The production of these young plants is the last act in the functions of the parent bulb, which immediately afterwards becomes a dead shrivelled membrane. I have sometimes seen little plants beginning to form in this way so early as September. Their progress after separation is unknown, but probably several years elapse before they are far enough advanced to push out flowers." Pp. 351, 352.

In his therapeutical part, Dr Christison has sought rather to give an abstract of the most important uses of each substance, as corroborated by his own study and experience, than a history of the numerous applications of drugs which different writers

ave signalized. To collect these is an endless, and by no means profitable task; and we may take this opportunity of remarking, that Dr Pereira's desire to let nothing escape him, has occasionally led him into this error, which Dr Christison has happily voided. We cannot deny that in several instances our own experience has not brought us to the certain conclusions to which Dr Christison has attained; but we nevertheless consider the herapeutical portion of the work as highly valuable. The article *colchicum* lies open before us, and we select the following assage as being worthy of perusal.

"Colchicum cannot be safely used as a sedative in inflammatory diseases, r a specific in gout, without due caution, and a thorough acquaintance with s properties. For on the one hand, it appears seldom to act therapeutially before producing a slight degree of that physiological action—indicated y diarrhœa, colic pains, and frontal headache—which in a higher degree onstitutes it a poison; and on the other hand, this drug, owing either to inividual differences in constitutional susceptibility, or to irregularities in the trength of its preparations, appears singularly variable in energy, so that hat occasions no effect at all upon one individual, excites alarming symptoms in another. The only allowable mode of administering it, therefore, to begin with small doses, and to repeat them with a frequency proportional to the urgency of the case, gradually increasing the dose till the disease begins to yield, or till colic and diarrhœa make their appearance. As oon as the bowels are affected, the action of the remedy must be diligently atched, and the doses at first suspended or diminished. By attending to hese rules I have never had occasion to observe any unpleasant effects from he use of colchicum, or any symptoms which a dose of opium did not eadily subdue. There are some, it may be observed, who doubt that the evelopment of the physiological action of this remedy, is in any circumtance necessary for its therapeutic action. It would be incorrect to hold he opposite doctrine to its full extent—that its therapeutic depends on its hysiological action. But I am strongly inclined to believe that its good ffects are not manifested until the constitution is so charged with it, that s physiological action straightway begins to show itself. For I have never een a case of rheumatism essentially benefited, till the patient began to uffer from colic and diarrhœa on the one hand, or from frontal headache nd giddiness on the other. The ill success which some practitioners have ncountered in using colchicum, may have arisen from inattention to this ircumstance. On account of the tendency of the remedy to debilitate the tomach, it is advantageously combined with aromatics, such as cinnamonater, and with a little muriate of morphia." P. 355.

The third work in our list is Dr Bellingham's Elements of Materia Medica and Pharmacy, edited by Dr Arthur Mitchell. We were at first a little puzzled to make out why Dr Bellingham, who, so far as we know, is alive and well, should have got another person to edit his book; but the mystery was solved by he first sentence of the preface.

"The editor of these Elements of Materia Medica and Pharmacy, (having een engaged for many years in teaching the different branches of medicine) as frequently experienced the want of a work upon these subjects, which e could safely recommend to the student. This deficiency the editor has ndeavoured to supply, having been familiar for several years with the ar-

rangement followed by Dr Bellingham in his lectures upon the materia medica, and with the manner in which the several subjects were treated, the former being superior to any classification with which he is acquainted, and the latter presenting some novelty, and appearing to possess some superiority over those generally adopted."

From this we are led to suspect, that Dr Mitchell is one of those useful individuals who "prepare gentlemen for passing the Hall and College," and whose functions are *molendinary*; and that this book is intended to aid students in preparing themselves for the fiery ordeal through which they must pass, to obtain the "*summos medicinæ honores*," or the license to practice "*ubique gentium*." If we have rightly divined its object, we can recommend the work as containing many things which a student must know in order to pass his examinations. He will learn in it how to prepare oxygen, nitrogen, and hydrogen, the atomic weights, specific gravities, and general chemical and physical qualities of each; and all this, it is well known, must be "got up for the College." But we are at a loss to know how these details come to form part of Elements of Materia Medica and Pharmacy; and we own that if we were re-preparing for our examination, we should feel more disposed to collect our information by reading the corresponding portions of Turner's, Graham's, or Kane's chemistry.

As to the arrangement of Dr Bellingham's lectures, of which Dr Mitchell is so much enamoured, and the method of treating the subject, we see the novelty in many places, but have failed, notwithstanding a hearty endeavour, to discover the superiority. We do not see, for example, why in this, the first part of the work, such an arrangement should be followed, as should bring out a description of the chemical properties of the metals and their oxides, which is thus separated *longo intervallo* from the pharmaceutical and therapeutical history of the same, and from the account of their other compounds of analogous composition, such as the iodides and chlorides. Nor do we recognise the precise superiority of the chapter which terminates at page 73, with a description of protoxide of silver, preceding that which commences with an announcement of the fact that metals, by combining with oxygen, form oxides, acids, or alkalies. Seeing that a considerable number of metallic oxides have been already described, we think it would have been better, if such very elementary chemical propositions were to enter at all into a work on materia medica and pharmacy, that they had been stated first, and thus the tender mind of a student would have been delicately prepared for receiving with more profit, a detailed account of the individual oxides or alkalies so formed. In fact, the first six chapters of this work are mere gleanings from the standard elementary works on chemistry, (arranged

with more of "novelty" than "superiority,") and with which every student who follows a good "arrangement" in his studies should be familiar, before he begins to apply himself to materia medica and pharmacy.

At chapter vii., however, the book begins to improve, because it there assumes more of the form of a work on the subject which its title-page announces; and we may safely say that a student of materia medica will derive considerable profit from perusing this and the succeeding four chapters. The subjects which they embrace are:—the general nature of pharmaceutical operations; pharmaceutical preparations; the *modus operandi* of medicines; circumstances which modify the general action of medicines; modes of administration and combination of medicines. These are really useful chapters, containing in a short space, little, it is true, that is new or original, if we except one or two hints on pharmaceutical operations which are given by Dr Mitchell, but much which every student ought to know, and which would form a valuable introduction to the study of individual substances. We wish that these chapters had stood alone, unencumbered by the mass of superfluities through which we have to struggle, in order to get at them. They would have formed a very useful little treatise for students. At chapter xii., however, the materia and pharmacy are again lost sight of, and the grinding stone reappears. The classification of the articles of the medica opens up the subject of natural history, and we at once find ourselves in the midst of an account of the various divisions and subdivisions of the animal and vegetable kingdoms. This we find is given as an introduction to the individual substances, which are afterwards to be described according to a therapeutical classification. We shall be glad to find, when part ii. is published, that Dr Bellingham's love for a therapeutical arrangement does not lead to a considerable amount of repetition which might have been avoided by following a natural history order. In the mean time we must say, that it is tiresome to find in a treatise on materia medica, nearly sixty pages occupied chiefly with characters of the natural orders, which our readers will learn much better from Lindley's Introduction. It is quite true that this botanical part of the work may save some students who want time or inclination, from studying botany in a more legitimate and systematic manner. It is not objectionable as an introduction to a therapeutical arrangement of individual substances; but then it ought, as in Dr Pereira's work, to have come in a smaller type, and should never have formed so large a part of the text of an elementary work on materia medica and pharmacy.

Our objections to the work now under consideration, apply more to the manner than the matter. In the latter respect, indeed, with

perhaps one or two trifling exceptions, it is correct and trustworthy. It contains much valuable information, undoubtedly, but certainly not of a kind appropriate to a work on materia medica. We urge this point more particularly, because it has been the subject of an attack directed against its details, written obviously by one who has prostituted the right of free and anonymous criticism, to the unworthy purpose of gratifying personal spleen and malice. It is but fair to add, that the respected editors of our Irish contemporary in which this article appeared, have expressed their regret at its admission into their pages: and that Dr Mitchell has, in the same Journal, successfully rebutted nearly the whole of the accusations of error imputed to him.

PART THIRD.

PERISCOPE.

PRACTICE OF PHYSIC AND PATHOLOGY.

Observations on the Incipient Stage of Cancer of the Womb. By Professor Montgomery of Dublin.

The distinguished author of these observations has satisfied himself, that in the majority of instances, the *first discoverable* morbid change which is the forerunner of cancer of the uterus, takes place in and around the *muciparous glandulæ*, or *vesicles*, sometimes called *ova nabothi*, which exist in such numbers in the *cervix and margin of the os uteri*. These (says Dr Montgomery) become indurated by the deposition of scirrhous matter around them, and by the thickening of their coats; in consequence of which, they feel *at first* almost like grains of shot or gravel under the mucous membrane; afterwards, when they have acquired greater volume by further increase of the morbid action, they give to the part the unequal bumpy or knobbed condition, like the ends of one's fingers drawn close together. When this *second stage* (usually described by writers as the first) is established, all means hitherto devised have failed in producing any permanent beneficial effect.

It might, at first sight, appear an objection to the above view, that cancer uteri sometimes commences in the upper parts of the organ, or even in its appendages, where these muciparous follicles, or ova nabothi, are not generally supposed to exist; but that they do exist in these situations, and occasionally appear there very distinctly, Dr Montgomery has repeatedly ascertained and demonstrated, and has preserved several specimens of them, fully developed in these parts; this observation has been made by many others long since, (see Morgagni, Epist. 47, No. 20, *et seq.*); their detection in a state of development in the latter situations is, however, a comparatively rare occurrence.

In regard to the diagnosis of this incipient stage of carcinoma uteri, Dr Montgomery states, that in a large proportion of the cases, there is found a decided *fulness*, or a *distinct tumour*, in one or other iliac hollow, with fixed pain, and tenderness traceable to, and as it were, issuing out of the abdominal ring; there is, generally, more or less irritation of the bladder, with dysuria, and the patient often complains of a sensation about the lower part of the rectum, which induces her to think that she is labouring under piles. Menstruation, though in some instances disturbed, is much more frequently quite regular in its returns, but there are apt to be bursts of hemorrhage, either accompanying the discharge, or occurring in the intervals; there is little or no leucorrhœal or serous discharge, often none; and it is not until the disease has existed for a considerable time, that the appetite is impaired, sleep is disturbed, the flesh becomes softer and wastes, and the countenance pale, and expressive of distress.

On examination per vaginam, the margin of the os uteri is found hard, and

often slightly fissured, and projects more than usual, or is natural, into the vagina, and is irregular in its form.

In the situation of the muciparous glands, there are felt several small, hard, and distinctly defined projections, almost like grains of shot or gravel, under the mucous membrane. Pressure on these, with the point of the finger, gives pain, and the patient often complains that it makes her stomach feel sick.

The cervix is, in most instances, slightly enlarged and harder than it ought to be. The circumference of the os uteri, especially between the projecting glandulæ, feels turgid, and to the eye presents a deep crimson colour, while the projecting points have sometimes a blueish hue.

There is no thickening or other alteration of structure in any part of the vagina, at its conjunction with which the cervix uteri moves freely; nor is there any consolidation of the uterus with the neighbouring contents of the pelvis; in fact, the morbid organic change appears to be, at first, entirely confined to the os uteri, and lower portion of the cervix.

This stage of the affection is, in many instances, *very slow*, lasting sometimes *for years*, before the second and hopeless stage is established. During this time the patient experiences only comparatively slight and transient attacks of pain, or perhaps only sensations of uneasiness, referred often to the situation of one or other of the ovaries, or about the os uteri, with anomalous tingling along the front and inside of the thighs; these last for a few hours, or a day or two, and then disappear, perhaps for weeks, but again and again return in the same situation, and for a long time, are not increased in severity. The patient finds that sexual intercourse now occasionally causes her pain, which she ascribes to some deep-seated part being touched, and the act is followed by an appearance of blood; she is also often troubled with slight irritability of the bladder; but the appetite, digestion, and sleep, may for a long time continue good, and the pulse generally gives no indication of the existing disease, or its changes,—an observation which will be found applicable to many uterine affections of a very grave character; in short, the general health may long remain quite undisturbed, nor has the patient, in many instances, the slightest suspicion that there is any thing seriously wrong with her, nor thinks of seeking for medical aid, until she is induced to do so by the solicitations of her husband, or some anxious friend who has become, as she thinks, unreasonably alarmed about her state.

With regard to the pain and tenderness, with fulness, and sometimes a distinct tumour, alluded to as felt in the iliac hollow, Dr Montgomery observes, that this affection of either the ovaries, or the glands at the sides of the uterus, in different forms and stages of carcinomatous affections of the organ, is a much more constant occurrence than is generally supposed; and moreover, he is, from repeated observation, much inclined to believe, that it is often the source from which the morbid irritation originally springs, and is communicated to the uterus.

Dr Montgomery enters at length into the treatment of the affection which he has described. In almost every instance he advises it to be begun by *the local abstraction of blood*, either by cupping, or by leeches applied to the os uteri, or as near as possible to the organ; and their application will, in most cases, require to be frequently repeated, and should be accompanied by the free use of anodyne fomentations. With regard to *venæsection*, although it may be desirable to practise it under particular circumstances, it is not in general required; and the case in which it is called for, should be regarded as an exception in the plan of treatment generally most suitable.

Except there be something specially to forbid its use, *mercury* should be given, in some form, so as to bring the system very gently, but decidedly, under its influence; for which purpose it may be combined with iodine, in very minute proportions, with camphor, opium, hyoscyamus, or hemlock; and occasionally by friction, especially where there exists evidence of inflammatory action in the iliac hollow, as already adverted to.

Afterwards, *iodine* or *hydriodate of potash* may be used both internally and externally; and *iron* will be found a most beneficial and powerful agent, especially in the form of the saccharine carbonate, or the carbonate given in the nascent state.

The *iodide of iron*, which combines, to a certain degree, the powers of both remedies, may also be used with advantage in most cases, and will be best administered in the form of *Dupasquier's syrup*, which is now prepared, of different strengths, by our chemists and apothecaries.

Arsenic has received the testimony of many able practitioners in its favour, as an agent capable of giving great relief in these affections; and Dr Montgomery adds his to the same effect, having obtained marked benefit from its use, especially when combined with anodynes, even in advanced states of this disease.

Counter-irritation is an agent of great influence in this complaint, and may be established in a variety of ways, which it is unnecessary to enumerate; but a very effectual mode is, by making a small blister over different parts, in succession, and keeping it discharging freely for several days by the application of the French dressing, or Albespeyer's papers.

The *warm bath* and the warm *hip bath* are means of great value throughout the treatment of this affection; and their effect in soothing the uterine irritation may be much promoted by admitting the warm water into contact with the internal surface of the vagina and os uteri, which may be accomplished, without difficulty, by introducing into the vagina one of Lassaigne's speculums, which are made of wire-gauze, coated over with caoutchouc; or a small plain metal speculum, with perforations in its sides, will answer the purpose extremely well; and the patient can apply the instrument for herself--better, indeed, than any one else could. Dr M. observes, that where warm baths are used in the treatment of amenorrhœa, this mode of managing them may be adopted with great advantage.

After the removal of the congestion, and organic changes from the os uteri, there remains occasionally a sensitiveness of the part, which causes the patient much discomfort, and which will be best relieved by the use of the bath, as above directed, conjoined with anodyne applications to the part, or the nitrate of silver in solution; the best mode of applying which, is by means of a glass tube of about an inch in diameter, with a funnel top, and bent near its middle at a right angle.[1] This instrument the patient can introduce and manage for herself; all that is necessary is, that she should lie on her back, and introduce the tube as far as its curvature, and then pour into the upper end, the medicated solution, which will immediately pass to the os uteri, and can be retained there, as long as is necessary, the tube filling the vagina sufficiently to prevent its flowing away, which is a great advantage, above all other methods with which I am acquainted, for applying lotions to this part.

The patient should be strictly enjoined to avoid everything that could stimulate the uterus, such as riding on horseback, &c.; but especially, she should refrain from sexual intercourse. I need scarcely add, that the greatest care and moderation will be essentially requisite in the quality and quantity of the patient's diet. Wine, if used at all, should be of a very mild kind, and very sparingly taken; and the same rule should apply to malt drinks; the stronger kinds of ale and porter should be altogether prohibited.

No circumstance connected with the treatment of this affection requires more scrupulous attention than the regulation of the patient's habits and mode of living; indeed, if this be not very carefully managed, all other measures will most probably be defeated.

Dr Montgomery concludes his interesting observations, by laying down

[1] The lower arm should be from three and-a-half to four inches long, and the upper from five to six inches in length; in substance it should be about one-eighth of an inch thick, and the margins of the vaginal end should be perfectly smooth and rounded, *by being fused at the furnace*, and not by cutting with the wheel.

the four following propositions as the result of his observation and experience, upon the affection of the muciparous glands of the cervix uteri, of which he treats,—

1. That the affection here described is the first stage of cancer uteri.
2. That its existence is indicated by symptoms and organic changes sufficiently marked to attract our attention, and cause its discovery on examination.
3. That if not arrested *promptly and decidedly*, it will pass into an incurable condition.
4. That it has been, and therefore can be so arrested by suitable treatment, and the patient saved from the lingering agony to which she must otherwise fall a victim.

[We have given Dr Montgomery's observations at considerable length, because we consider them of great value in a *practical* point of view. At the same time we feel perfectly convinced, that, in a *pathological* point of view, Dr Montgomery is in error in regard to the disease of which he writes. In other words, while we cordially assent to his 2d and 4th concluding propositions regarding the diagnosis and curability of the affection described by him, we entirely dissent from his 1st and 3d propositions regarding its cancerous nature, and its inevitable passage into an incurable state, if not promptly and decidedly arrested. The disease is one of which we have seen numerous instances, and have always looked upon it merely as a form of chronic inflammation of the muciparous follicles of the cervix uteri. It has been described by various French pathologists as one of their varieties of granular inflammation of the cervix. That it is not carcinomatous in its nature, as Dr Montgomery supposes it to be, is to our mind fully proved by what he himself states, and what we have often witnessed, viz. its perfect and easy removal by appropriate local and general treatment. Surely no form or stage of cancer will be alleged to be curable by such means. Besides, the disease may continue for years, and not terminate in any carcinomatous change. We happen to know the history of one case in particular, where this granulated condition of the cervix uteri was ascertained nearly twenty years ago by two of the first accoucheurs of the time. We have their written report before us. Some months ago, the patient, who had been living abroad, came under our care; the same state of the cervix was ascertained by the finger and speculum, and the grains, "like shot or gravel beneath the mucous membrane," disappeared under local scarifications, and the direct application of nitrate of silver. If the disease were actually carcinomatous, it would certainly not have followed such a course. We would observe that we have watched some cases of carcinoma uteri from a very early stage, without remarking any granular condition of the cervix at any stage of their progress.

Altogether, then, we hold the granulated cervix uteri not to possess the anatomical characters of cancer of that part; it may last for many years without undergoing any of those changes which inevitably occur in cases of cancer; and it is curable by local and general antiphlogistic measures, which cancer certainly is not.—J. Y. S.]

HEMERALOPIA—INTERMITTENT AMAUROSIS. BY DR V. STORBER.

Theresa Schrepfer, aged twenty-five, subject to epilepsy for the last seven years, and a patient in the Civil Hospital of Strasburgh for the last two, states, that during these last two years she has been affected twice with hemeralopia; that is, with a blindness which came on at sunset, and which disappeared in the morning when she awoke. The disease returned fifteen days ago: one evening, at the commencement of twilight, the patient suddenly lost her sight, without any painful sensation, and in the morning the function was re-established. The same phenomenon took place at the

same hour, for several consecutive days; but since the day before yesterday, the blindness, instead of not coming on till sunset, has commenced in the forenoon.

June 6th, 1841. At 8 A.M. the attack of blindness came on. The patient sees absolutely nothing, not even the flame of a lighted candle, which was held close to her eyes. The conjunctiva, sclerotica, and cornea of both eyes, are in a normal state; the pupils do not present anything peculiar; the irides contract but slowly under the stimulus of light. This attack lasted for six hours. Half a gramme of the sulphate of quinine was prescribed, to be taken in two doses.

June 7th. The attack came on at 10 A.M., and lasted six hours. A gramme of quinine, to be taken in three doses, was ordered.

June 8th. No attack. The quinine to be continued.

June 9th. At 10 A.M. a fresh attack, which lasted eight hours, and terminated in a fit of epilepsy.

June 10th. No attack.

June 11th. At noon an attack of blindness, which at the end of two hours terminated in another fit of epilepsy.

Aug. 14th. The amaurosis has not returned since. The quinine was continued for several days after the last attack.—*Annales d'Oculistique*, Oct. 1841.

Treatment of Diabetes Mellitus. By M. Bouchardat.

At the meeting of the Academy of Sciences on the 16th of November, M. Bouchardat read a paper on this subject. He is of opinion that the sugar found in the urine is owing to the fecula which the patients eat in their bread, and that the great difficulty which the physician has to contend against, is to keep those affected with this disease, for a sufficiently long period, from the use of it. As the quantity of fecula is diminished, so is the sugar, and *vice versa*. Some days before death, the sugar disappears entirely, owing to the patients at that time being unable to make use of any aliment at all. To accomplish this object he orders bread made with gluten, which does not contain more than one-sixth of fecula. The next great indication for treatment is to restore the secretion of the skin to its normal condition, and to convert that of the glands and mucous membrane of the alimentary canal from an acid to an alkaline state. This is effected by the constant use of warm woollen clothes, and by the administration internally of opium and ammoniacal salts, as the carbonate of ammonia. It is only after this medicine has been persevered in for some days that the urine becomes alkaline. M. B. read four cases showing the good effects of this treatment. In two of them, the urine remained completely healthy, which is an exceedingly rare occurrence in this disease. and in these only had the use of flannels been had recourse to; thus proving that the action of the other medicines employed was materially assisted by the constant diaphoresis kept up.—*Gazette Méd. de Paris*, 20th Nov. 1841.

On Inflammation of the Umbilical Arteries as a Cause of Trismus in New-born Children. By Drs Levy and Cazalio.

Dr L. has taken his observations from 22 cases, which occurred to him in the Lying-in-Hospital. In 20, the disease proved fatal, and in 14, inflammation of these arteries near the bladder was found. In general, both were affected. They were red, and filled with a thin purulent matter; their internal coat was wrinkled and softened. Adhesions of the bowel and omentum were observed near the point of disease. In one case, the artery was perforated. In two children, the cord showed no alteration externally; in

two it became of a brownish colour; and in six, pus was seen at its base. In one case, the trismus made its appearance on the seventh day after birth, and death occurred on the sixteenth. From these facts, Dr Levy is of opinion that the inflammation of the artery is the cause of the trismus. M. Cazalio, who has also paid attention to this subject, has shown, that inflammation of the vein generally accompanies that of the arteries; and he has seen the latter inflamed without any bad result ensuing; besides, inflammation of an artery is by no means dangerous, if the vessel is not essentially necessary to the nutrition of the organ which it supplies. It is probable, then, that in the cases observed by Dr Levy, there was inflammation of the vein as well as of the arteries.—*L'Examinateur Méd.* 28th Nov. 1841.

Local Treatment of Neuralgia.

Dr Musset, who has suffered under very violent attacks of neuralgia, speaks in the highest terms of an application, consisting of—watery extract of opium eight parts, and decoction of mallows one thousand parts. A flannel is to be steeped in this fluid at a high temperature, and placed round the painful part, the whole being covered with oil-cloth. The application may be renewed after a few hours, if necessary.—*Journ. des Con. Méd.-Chir.*, No. 12; and *Prov. Med. and Surg. Journ.*, No. 2. vol. i. p. 42.

Cancer of the Sygmoid Valves of the Aorta.

The patient was a soldier. When admitted into hospital, on the 23d February 1838, he had just returned from Africa, and only complained of a swelled state of one ankle, which he attributed to fatigue. On the 30th of March, thirty-seven days after admission, he died.

Symptoms.—They consisted chiefly in violent dyspnœa, often coming on with agony, and threatening suffocation; great moral depression; lividity of the countenance; a slight trembling feel over the region of the heart; and a *bruit de râpe*, on auscultation. During the last days of his existence, the pulse was small, hard, and irregular, but not intermittent. He died in a most painful paroxysm of dyspnœa.

Autopsy.—The hands and face were infiltrated with serum. The veins of the head and thoracic viscera were much engorged. The right side of the heart was healthy. On cutting open the left side with the aorta, the cause of the disease became manifest. One of the sygmoid valves of the aorta was completely disorganized; it was four times thicker than natural, and transformed into an irregular, tuberculated tissue. On dividing the valve in its centre, the nature of this tissue was seen to be evidently cancerous; it was friable, and of a reddish-yellow colour. The degeneration had extended slightly to the neighbouring tissues; and behind the diseased valve was a cancerous ulceration, of the size of a ten-sous piece, covered with cancerous vegetations.

Remarks.—The diseased valve had in this case considerably abridged the calibre of the aorta, and impeded the passage of blood into the arteries. Hence the blood which arrived from the lungs was imperfectly distributed to the rest of the body; and hence the congestion of the lungs, occasioning dyspnœa, livid countenance, &c. The left ventricle was not augmented in size; but this seems to be accounted for by the recent date of the disease, the first symptoms of which had occurred only forty days before death.—*Revue Médicale*, Nov. 1841; and *Prov. Med. and Surg. Journ.*, Jan. 8, 1842.

Case of Contraction of the Mitral Valve, without Vegetation or Ossification. By Richard Hindle, Esq.

Nancy B., aged 24, originally strong and healthy, suffered from a severe attack of fever about five years ago. In about six weeks she recovered, so as to be able to resume her employment, but never regained her former state of health. She was easily fatigued, and was observed frequently to suffer from shortness of breath, both during the day and night. Mr Hindle first saw her about 18 months ago; at that time her appearance was cachectic; she laboured under paroxysms of dyspnœa, and had frightful dreams at night; her feet were occasionally œdematous; the pulse was 84, full and soft; and the first sound of the heart was accompanied by a strong bellows murmur. She derived most benefit from diuretics and opiates; digitalis gave no relief, but rather aggravated the symptoms. Little pain was complained of, with the exception of crampy sensations, chiefly distressing at night. Extravasation of blood into the cutaneous textures occurred for many weeks before her death. The slighest chill brought on a teazing cough, and the mucus expectorated was sometimes tinged with blood.

Post-mortem examination, 48 hours after death.—The aspect of the body was that of one considerably advanced in decomposition, being literally covered with ecchymoses, the few interstices between them being of a dingy yellow, almost livid colour. The lungs were much congested, and the veins on their external surface were so much distended as to seem varicose. There was fluid in the pleuræ and in the pericardium; and the heart, but only on the right side, was much increased in size, the left appeared a mere appendage. The former extended from an inch and a half to two inches beyond the sternum on the right side. The walls of the right ventricle were much hypertrophied, and its cavity, which was enlarged, contained a fibrous polypus. The pulmonary artery was increased in size. The left ventricle was small, and its walls attenuated; the left auricle, as well as the pulmonary veins, also was small. The left auriculo-ventricular opening would only admit a moderately sized quill; its edges were thick and shining, had no vegetations on them, and, from their thickness, seemed to be permanently open. The aorta was much diminished in size, but its valves were healthy. The most interesting circumstances in this case are, first, the disease being limited to one locality; secondly, the great contraction of the mitral valve without any ossification or vegetations being found on it; and, thirdly, the continued regularity of the pulse, which, according to Dr Williams, is always irregular or intermittent, when the mitral valve is affected.—Abridged from the *Prov. Med. and Surg. Journ.*, 4th Dec. 1841.

SURGERY.

Dr Mott on Porrigo.

The best local application in porrigo, is the following :—

R. Ol. Nicotianæ Tabaci,	gtt. x.
Hydrarg. præcip. alb.	℥i.
Adipis suillæ,	℥i.

Tere diligenter in mortario ut fiat unguentum.

When local applications fail, the internal administration of the corrosive muriate of mercury in syrup of sarsaparilla is strongly recommended. At Cairo, Dr M. saw great and manifest advantage produced on porrigo by the use of an ointment of charcoal, in the hands of French and German physicians.—*New York Lancet.*

BOTH CAROTIDS TIED BY DR MUZZIE.

Dr Muzzie of Louisville, on the Ohio, tied the carotid artery on one side for an enormous aneurism by anastomosis on the scalp, and by that means diminished it considerably. Six months after he tied the other carotid, and with success, the tumour disappearing entirely. This is the first case in which both carotids have been tied successfully.—*New York Lancet.*

TREATMENT OF NÆVUS. BY PROFESSOR PATTISON OF NEW YORK.

A. B., a healthy infant, eleven months old, affected with "vascular nævus" on the right shoulder, as large as a pigeon's egg.

Remarks by Professor Pattison.—After mentioning the various means which have been proposed for removing this disease, *e. g.*, excision, vaccination, kali purum, &c., he says, "But by far the safest and most effectual treatment is the removal of the tumour by means of passing repeatedly through it red-hot needles. The principle on which this treatment is based, is of course perfectly obvious, and we will now proceed to its adoption in the present case."

"*Operation.*—An assistant, by means of a spirit lamp, made the needles red-hot, and they were passed in rapid succession about twenty times into the tumour in all directions. There was no hemorrhage, and the child apparently suffered very little pain. The operation was repeated twice afterwards, after intervals of a week, and in the course of a month the tumour had entirely sloughed away, and the part healed without a vestige of the diseased structure being left."—*New York Lancet.*

TREATMENT OF STRUMOUS OPHTHALMIA. BY DR MOTT OF NEW YORK.

G. H., a girl aged 16, affected with strumous ophthalmia. The lid was granular, and the upper part of the cornea slightly opaque.

Treatment.—The sulphate of copper was directed to be applied every two or three days to the affected eye-lid, and the domestic remedy of dropping a very small quantity of molasses into the inner canthus every morning. The beneficial effect of which treatment, was very pointedly spoken of by Professor Mott in his clinical lecture.—*New York Lancet.*

FORENSIC MEDICINE.

CASE OF FRACTURE AND PARTIAL DISLOCATION OF THE CERVICAL PORTION OF THE VERTEBRAL COLUMN. WITH REMARKS. BY A. KING, ESQ., Surgeon, Glasgow.

On the afternoon of the 2d November last, I assisted my friend, Dr Wharrie, of Hamilton, in making a post-mortem inspection of the body of William Sinclair, whose death was reported to the authorities to have been occasioned by violence, in the parish of Glassford, that morning between seven and eight o'clock. The body was that of a stout middle-sized man, apparently about fifty years of age. The only external marks of injuries were a scratch, half-an-inch in length, on the left side of the neck, another, measuring two inches, over the left clavicle, and a slight abrasion on the back of the right elbow joint. The integuments being dissected from the anterior of the neck, a small coagulum of blood was found underneath the scratch first noticed,

and three similar spots, each the size of a pea, on the substance of the left submaxillary gland.

The contents of the cranium displayed no indication of injury or morbid structure. In the thorax, the lungs were found more than usually gorged with blood, but, in other respects, natural; the right side of the heart and pulmonary artery were distended with blood, the left side was empty; the various abdominal organs were found in a normal condition. The trachea, œsophagus, and lungs being drawn down towards the diaphragm, a slight inequality was detected on the anterior aspect of the spine, between the bodies of the third and fourth cervical vertebrae; but there was not a greater degree of motion at that part than between the other cervical vertebrae.

The body being turned on its face, and the skin and first layer of muscles removed from the back of the neck, a quantity of coagulated blood was found amongst the muscles and cellular substance. On a careful dissection of the bones, an incomplete dislocation was found to have been effected between the third and fourth vertebrae of the neck, accompanied with fracture of the articular processes of both, on the left side. The phrenic nerves and vertebral arteries were uninjured. The spinal cord was compressed between the body of the fourth and the arch of the third vertebra; but after being removed from the canal, no indentation could be detected in its substance, nor any alteration in its structure.

On the 22d of December, Alexander Reid, a weaving agent, was tried before the Circuit Court of Justiciary here, for the murder of the said William Sinclair. It appeared from the evidence of the witnesses adduced at the trial, that the panel found fault with the deceased for keeping a web too long, and, without giving any warning, leaped upon him, threw him on the ground, and when he got on his knees in attempting to rise, caught him by the throat with his right hand, forced him backwards, and brought his head violently in contact with the ground. Sinclair expired after a few convulsive gasps.

I am not aware of any case on record where the same extent of injury resulted from a similar degree of violence. All the witnesses agreed that the road on which the affray took place was smooth and level, and that the head did not strike a stone. The bones of the spine were not diseased, and the muscles on the back of the neck were largely developed.

The instantaneous fatal termination of this case I ascribe to the circumstance of the pressure being applied to the spinal cord at the part where the phrenic nerves are given off, death being occasioned by paralysis of the diaphragm and cessation of respiration, which accounts for the gorged appearance of the left side of the heart.

This case shows the necessity of making a careful inspection of the vertebral column in every instance where death is alleged to have been occasioned by violence. The inequality on the front of the spine was extremely trifling, so much so, that had any other probable *causa mortis* been detected during the examination of the head, chest, or abdomen, it might have been passed over. There was no unusual degree of motion to point out the nature of the injury, and the thickness of the muscles on the back of the neck would have prevented us from discovering any ordinary displacement.—*Lancet*, Feb. 5, 1842.

PART FOURTH.

MEDICAL NEWS.

CHAIR OF SURGERY IN THE UNIVERSITY OF EDINBURGH.—The unexpected and much-to-be-lamented death of Sir Charles Bell, has caused a vacancy in the Professorship of Surgery at Edinburgh. Many candidates are in the field, among whom we have heard named Dr James Duncan, Dr Peter Handyside, Dr John A. Robertson, Mr James Miller, and Mr John Lizars.

ROYAL COLLEGE OF SURGEONS IN LONDON.—The JACKSONIAN PRIZE for the year 1841, has been awarded to Mr Rutherford Alcock, of Bolton Street, Piccadilly, for a Dissertation on Injuries of the Thorax, and Operations on its parietes. The same gentleman obtained the prize on a former occasion.

HARVEIAN SOCIETY OF EDINBURGH.—The annual prize given by this body has been adjudged to Dr Robert Mortimer Glover of Newcastle-upon-Tyne, for the best Essay on the prescribed subject: viz. "Bromine and its compounds." The paper is to appear in a cotemporary, and will in due time be noticed in our Periscope.

GUY'S HOSPITAL. SIR ASTLEY COOPER.—The annual distribution of prizes took place on the 9th May, after which the bust of the late Sir Astley Cooper, raised by his pupils to his memory, was uncovered. The bust was executed by Mr Towne. The inscription is,—"ASTLEY PASTON COOPER, alumni grato animo hoc marmor posuere, 1841."

NORTH OF ENGLAND MEDICAL ASSOCIATION. TESTIMONIAL TO MR CARTER.—At the recent anniversary meeting of this valuable body, Mr T. M. Greenhow, in name of the Society, presented, amid the loud applause of all present, an elegant silver tea-service to Mr Carter, "as a tribute of respect and gratitude" for his distinguished services in drawing up reports and conducting the correspondence.

STATISTICS OF UNIVERSITIES AND COLLEGES OF MEDICINE, SURGERY, AND PHARMACY IN SPAIN AND ITS COLONIES.

Year of foundation.

1200. Salamanca, by king Alfonso IX.
1293. Alcala de Henares, by king Sancho.
1346. Valladolid, by king Alfonso XI.
1430. Barcelona, translated in 1701 to Cervera, and restored in 1837 to Barcelona.
1483. Palma, (Majorca,) by Ferdinand the Catholic.
1500. Valencia, (instituted for general study in 1411).
1502. Seville.
1520 to 1550. Toledo and Granada, by the emperor Charles V., (Charles I. of Spain.)
1534. Huesca.
1560 to 1590. Santiago de Compostella (in Galicia), by Philip II.
1580. Oviedo, by Fernando Valdés, archbishop of Seville.
1583. Saragossa, by Pedro Cerbrena, bishop of Taragona.
1821. Laguna, (Island of Teneriffe,) by Ferdinand VII. at the solicitation of his confessor Cristobal Bencomo.

Besides the above, which exist according to the regulations of 1824, may be mentioned those of Osma and Avila, which are incorporated in that of Valladolid. The university of Sigüenza was joined with that of Alcala; and that of Orihuela merged in that of Valencia.

The following are the dates of the different schools of medicine, surgery, and pharmacy:—

Date of foundation.	
750 to 1755.	Cadiz, by Ferdinand VI.
760.	Barcelona, by Charles III., (for surgery only); in 1792, medicine was united with it; and, in 1799, clinical chairs were added by Charles IV.; and in 1827 it was designated a university of medicine and surgery.
780.	Madrid, by Charles III., and it hence bears his name, being called "S. Carlos."
815.	The college of pharmacy in Barcelona. (The order for its foundation, given in 1806, could not be carried out till 1815, on account of the war.)
815.	Madrid, by Ferdinand VII.
815.	Santiago (of Galicia), by the same. *Now closed.*
815.	Seville, by the same. *Also closed.*

List of the existing Universities of Germany, with the Date of their Foundation.

Date of foundation.	
348.	Prague, by the emperor Charles IV.
365.	Vienna. (Austria.)
386.	Heidelberg. (Baden.)
409.	Leipsic. (Saxony.)
419.	Rostock. (Mecklenburg.)
456.	Freiburg. (Baden.)
459.	Griefswalde. (Prussia.)
477.	Tübingen. (Wurtemberg.)
527.	Marburg. (Hesse.)
544.	Königsberg. (Prussia.)
550.	Jena. (Saxony.)
582.	Würzburg. (Bavaria.)
607.	Giessen. (Hesse.)
665.	Kiel. (Holstein.)
694.	Halle. (Prussia.)
702.	Breslau. (Prussia.)
735.	Göttingen. (Hanover.)
743.	Erlangen. (Bavaria.)
810.	Berlin. (Prussia.)
818.	Bonn. (Prussia.)
826.	Munich. (Bavaria.)

Statistics of Hospitals and other Charities in France.—There are in France 2,319 public hospitals, with an income of 52 millions, (francs,) giving succour to 53,000 indigent persons; 6375 benefit societies, disbursing 12 millions, and giving assistance to 696,000 individuals; and 42 pledging shops (*monts-de-pitié,*) pledging 5 millions of francs.

BOOKS RECEIVED.

The Elements of Materia Medica and Therapeutics. By Jonathan Pereira, M.D., F.R.S. and L.S., &c. &c. Second edition enlarged and improved, 2 vols. 8vo. Pp. 1926. London: Longman & Co., 1842.

Reviewed in the present Number.

An Inquiry into the Nature and Pathology of Granular Disease of the Kidney, and its mode of action in producing Albuminous Urine. By George Robinson. 8vo, pp. 79. London: John Churchill, 1842.

3. On the Parasitic Fungi found growing in living Animals. By John Hughes Bennett, M.D. Edin., &c. (*From the*

Transactions of the Royal Society of Edinburgh, vol. xv. part ii. 4to, pp. 18. Edinburgh : 1842.

4. Dr Paine's Answer to Circular Letters, by Drs Carpenter and Forbes. 8vo, pp. 8. Boston : D. C. Capp, 1842.
5. Notice of Reviews by the British and Foreign Medical Review, and the Medico-Chirurgical Review, (April 1841,) of the Medical and Physiological Commentaries, as contained in the Boston Medical and Surgical Journal of September 1841. By the Author, Martyn Paine, M.D., A.M., Professor of the Institutes of Medicine and Materia Medica in the University of New York. 8vo, pp. 8. Boston: D. C. Capp, 1842.
6. A Reply to an Attack by Henry J. Bowditch, M.D., upon the Essay on the Principal Writings of P. Ch. A. Louis, M.D., as contained in the Medical and Physiological Commentaries. By the Author. 8vo. pp. 56. Boston, 1840.
7. A Discourse introductory to a Course of Lectures on the Institutes of Medicine and Materia Medica, delivered before the Medical Class of the University of New York, at the Session of 1841–1842. By Martyn Paine, A.M., M.D., &c. 8vo, pp. 33. Boston, 1842.
8. A Practical Treatise on the Management and Diseases of Children. By R. T. Evanson, M.D., Professor of Medicine in the Royal College of Surgeons in Ireland, and H. Maunsell, Professor of Midwifery in the Royal College of Surgeons in Ireland. *Fourth edition enlarged and improved.* 8vo. Dublin: Fannin & Co., 1842.

We intend soon—perhaps in next Number—to review this admirable work, and quote several passages. In the mean time, we recommend it as the best treatise in our language upon the subjects of which it treats.

9. Lecture introductory to a Course of Anatomy, delivered to the Students of Anderson's University, Glasgow, with a Statistical Table, showing the Comparative Expense of Medical Education throughout the British Empire. By M. Buchanan, M.D., Professor of Anatomy, &c. 8vo. pp. 30. Glasgow: Fullarton & Co., 1842.

OBITUARY.

DEATH OF SIR CHARLES BELL, PROFESSOR OF SURGERY IN THE UNIVERSITY OF EDINBURGH.—This illustrious man is no more. He was found dead in bed in the morning of the 29th of April, at Hatton Park, where he was on a visit with his Lady. He was the fourth son of the late Rev. W. Bell, episcopalian clergyman in Edinburgh. In 1811 he married the daughter of C. Shaw, Esq. of Ayr. In 1831 he received the honour of knighthood. No one since the days of Harvey has, by his discoveries, done more for the advancement of physiology than Charles Bell, and throughout the whole world, wherever medicine is cultivated as a science, his name is known and honoured.

Killed near Cabool, in November last, G. M. Grant, assistant surgeon, Bombay Medical Service, fourth son of Mr Grant, bookseller, Edinburgh.

At Quimper, in Brittany, on the 7th instant, Alexander Macdonald, Esq., M.D., eldest son of William Macdonald, Esq., of Powderhall.

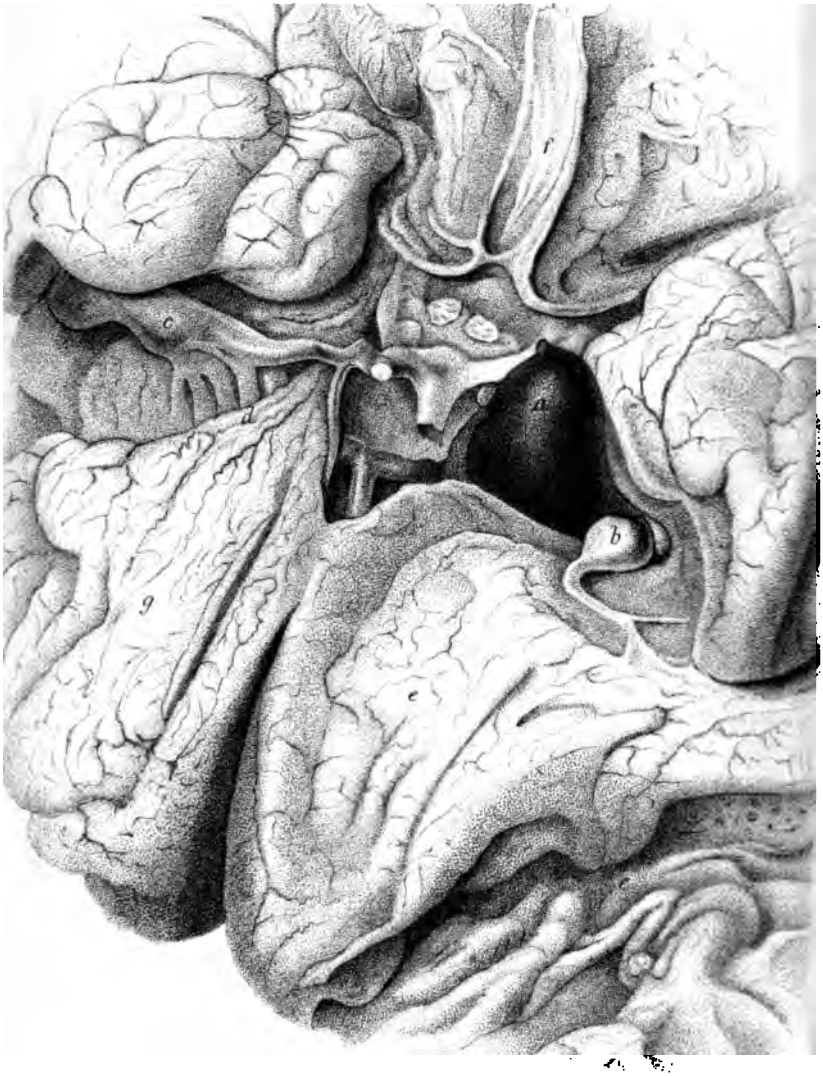
Lately, Sir John Meade, inspector-general of hospitals.

We have to record the death of a most celebrated woman, Anne Maria Donne, doctor of the university of Boulogne. On account of her great talents she had been appointed to the chair of midwifery in that university. She was also a member of the Benedictine Academy.—*Gazette des Hôpitaux*, 2d April 1842.

TO CORRESPONDENTS.

In our next, communications from Dr A. T. Thomson, Dr Golding Bird, Mr James Miller, Dr Williamson, and others.

We understand that Dr Paine of New York has sent his pamphlets to all and sundry, taxing them, as he has done us, with the postage of his tiresome and unreadable trash. We beg to intimate to him, that in future we must refuse his packages, unless they come free; and we advise our friends who have addressed us on the subject to do the same.



The Base of the Brain referred to in Dr THOMSON'S Paper.

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*A Case of Aneurisms within the Skull, terminating in Apoplexy and Paralysis; with Clinical Remarks. By* A. T. THOMSON, M.D., F.R.C.P.L., *one of the Physicians to University Hospital, London, &c. &c.* (With a Plate.)

JOHN MORGAN, aged 49, a porter, was admitted under my charge into University Hospital, on the evening of the 18th of January 1842. He was of a robust conformation, with a short neck, and a florid complexion. He had been for many years a sailor, but during the last fifteen years had remained on shore, and acted as a porter. His habits were intemperate.

The imbecility of his wife rendered it extremely difficult to obtain any correct history of his health, prior to the attack, for the relief of which he entered the hospital. From the account which was obtained from his landlady, however, it appeared that he had fallen in the street when tipsy, and cut the back of his head. This occurred in the summer previous to his admission into the hospital; and his landlady stated that, since that fall, his manner was changed: he became garrulous, silly, and very irritable. Although his former habits, also, were intemperate, and he was accustomed to drink to excess, yet, since his fall, a very little gin would make him tipsy.

On the morning of the day on which he was admitted, he felt unwell, and, on that account, remained in bed. In the afternoon, his wife, who had been from home, on her return found him insensible, with his head hanging over the side of the bed. He had vomited a quantity of dark-coloured, somewhat stercoraceous fluid. His eyes were turned up, and he spoke very indistinctly. He was sent to the hospital, about seven o'clock P.M., in a comatose state. The pulse at the wrist was scarcely perceptible; the breathing was laborious; the left side of the body was paralysed, both in reference to sensation and motion; and a quantity of dark-coloured saliva flowed from the left side of the mouth, which was drawn to the opposite side. He could close both eyes; but the right pupil was more dilated than the left. His feet were cold.

Soon after his admission he was cupped in the nape of the neck, to the amount of ℥ xvj; the body was wrapped in blankets; a foot-warmer applied to the feet, and a blister to the nape of the neck; an enema administered; and a pill, consisting of four grains of calomel, one minim of croton oil, and one of oil of caraway, ordered to be taken as soon as possible after the enema. The enema and the pill having operated, he was directed to take a four-grain calomel pill, every fourth hour.

On the following morning sensation returned, but the defect of motion remained the same as before. The pulse was now 92, and soft; there were convulsive twitchings of the mouth, and of the right arm and hand; and he could not protrude the tongue. He was ordered to be cupped again on the temples to the amount of ℥ xvj; the pill with croton oil was repeated; and the use of the calomel pills continued. He was also directed to take grs. v. of the sesquicarbonate of ammonia every fourth hour. Ice was applied to the shaven scalp, and another enema administered.

The same plan of treatment was pursued until the 25th, without any obvious improvement. On that day, however, he felt better. The head, which had been from the commencement of the attack free from pain, but hot, was now cooler, and the extremities were of a more natural temperature. He was conscious when he required a stool, and to empty the bladder of urine, but both of these evacuations took place in bed; and he said that he could not help it. The pulse was 80. He was ordered to continue the use of the pills, one every eight hours, and to have tartar-emetic ointment applied to the scalp. Two grains and a half of sesqui-carbonate of ammonia, and six grains of iodide of potassium were added to each dose of his mixture.

On the 26th, he remained nearly in the same state; he answered questions sharply and in a loud voice. His evacuations were passed in bed.

On the 27th, early in the morning, he became worse; both

upils were much dilated, but the right one more than the left.)uring the night his breathing became laborious; he seemed stu-id, but not violent; the paralysis of motion continued, but the ensation was perfect on both sides. He still passed his stools and rine under him; the pulse was 88, and so small as to be scarcely erceptible, and he appeared sinking.

On the morning of the 28th, the breathing was more embar-assed, and the mucous râle louder. The extremities were extreme-r cold, and the pulse imperceptible at the wrist. He died at a uarter of an hour past twelve o'clock P.M.

The Autopsy was made twenty-six hours after death. The exter-al aspect was that of a stout man, with much fat deposited in ıe adipose tissue. The head was well formed; and the su-ıres of the skull were obliterated. On opening the body, the *liver* as found adhering anteriorly, by old false membranes, to the iaphragm. Its weight was two pounds twelve ounces; it was)ft, easily torn, of a dark-red colour, with a good deal of yellowish ıatter throughout. At the anterior margin of the left side were ıveral yellowish granular masses. The gall-bladder was turgid ith bile. The *spleen* weighed only an ounce and a half. The *ngs* were partially adherent on both sides; they presented a ark, mottled aspect, and some of the vesicles were dilated larger han a pea, especially at the apex of the left lung, where there as also a puckering of the tissue and thickening of the pleura. he smaller bronchi were dilated and filled with a viscid, brown-ıh-red mucus; and at the lower end of the upper lobe were a few rey tubercles, and one yellow tubercle, the size of an almond, ı the centre. The left lung was adhering to the costal pleura y old adhesions in the posterior part. The *pericardium* was ıaded with fat. The *heart* weighed nine ounces; the left ven-ricle was slightly hypertrophied, but the valves were healthy. A mall ossific deposit was observed on the arch of the aorta, and nother at the division of that vessel into the iliacs. Both *kid-eys* were small and granular; and the cortical portion atrophied. n one, on the cortical portion, was a small cyst containing a little lear fluid. The weight of the right kidney was three and a half unces, that of the left four ounces. The *stomach* was healthy.

Brain.—On opening the cranium, and removing the skull cap, the essels of the dura mater were seen to be much gorged; there was ascular turgescence also of the pia-mater, especially on the left de, and opacity of the arachnoid, with a deposit of lymph on the ft side. There was discoloration of the anterior lobe of the right emisphere; and a patch of extravasated blood, about two inches ı diameter, under the right parietal bone, and beneath the pia-ıater; there was also a smaller patch of a similar description on ıe left hemisphere. About two ounces of bloody fluid were de-ɔsited at the base of the brain. The middle and anterior lobes,

on both sides, were adhering by false membranes at the base. The arachnoid was opaque in that place; and an aneurism a little larger than a hazel nut (see plate, *a*) was discovered on the trunk of the carotid where it gives off the arteria cerebri media, and another small one (*b*) on the curve of the artery. The right portion of the circle of Willis was wanting. On the same artery of the opposite side, there was also an aneurism (*c*), nearly globular; the branches of the vessel passing to the anterior lobe of the brain were enlarged (*d*), and their coats thickened. The anterior lobe on the same side as the large aneurism was also softened almost to a pulp (*e*.) The basilar artery was dilated, besides being white, opaque; and when it was slit open, the coat was found to be much thickened (*f*.) The anterior lobe on the opposite side was softer than usual.

Clinical Remarks.—The diagnosis in this case could not be mistaken, although the condition of the brain, which had induced the attack, could not possibly have been conjectured. The disturbed state of the intellect also pointed out the cerebral origin of the paralysis. The immediate attack was evidently apoplectic, accompanied with paralysis of the left side, not only of motion, but also of sensation; the latter of which, however, abated soon after the commencement of the treatment. The very imperfect history of the case prevented any accurate opinion being formed of the exciting cause of this seizure. It is probable, however, that the fall which the patient had six months before, must have produced such a change in the brain as predisposed it to apoplexy. He became more susceptible of excitement—a smaller quantity of liquor than formerly, affected him, and caused intoxication—and his manner was also much altered; it is not improbable, therefore, that softening had then begun, and was slowly proceeding. There was, however, no doubt that the commencement of both the apoplexy and the paralysis was simultaneous; and that cerebral inflammation existed, whatever might have been its exciting cause. It was to this condition of the brain, therefore, that our attention was first directed; and having taken measures to subdue it, our next object was to endeavour to restore the normal state of the cerebral vessels. As the sensibility returned so soon after the abstraction of blood, I was of opinion that any extravasation which had taken place was superficial; but this was merely a conjecture, as I am not aware of any means by which we can pronounce, with certainty, upon the place into, or upon which the blood is poured out. That the effusion was on the right side was most probable, as it is usually that opposite to the side on which the paralysis occurs, which, in this instance, was the left. I may here remark, that the greater number of hemiplegic attacks have occurred on the left side, a fact first noticed by Sir Gilbert Blane, although he at-

tempted no explanation of the circumstance. That extravasation had taken place was rendered probable from the well-known fact, that the most common form of paralysis from extravasation is hemiplegia. In this case, there was serous effusion at the base of the brain, but there was none into the ventricles,—a circumstance which was evidently due to the condition of the cerebral vessels, and the termination of inflammation of the meningeal coverings of the brain.

The heat of the head, and the flushed countenance of the patient, as well as the state of the pulse, clearly indicated inflammation, the existence of which was fully demonstrated by the appearance displayed on the post-mortem examination of the contents of the cranium. I may remark that the coagulable lymph thrown out upon the left hemisphere was much greater than that upon the right, a circumstance which can be accounted for by the obstruction of the supply of arterial blood to that hemisphere, owing to the large aneurism; on which, also, probably the softening depended.

In remarking on the flushed state of the countenance, as indicating cerebral excitement, it is necessary to add, that when other more decided symptoms are absent, we cannot regard this one as demonstrative of the condition of the encephalon, since any impediment to the arterial circulation within the cranium, depending on the carotids, must throw a more than ordinary quantity of blood into the external branches; and, consequently cause heat and flushing of the face, independent of increased action in the brain or its membranes.

In reviewing the statement of the symptoms, and the details of the condition of the brain displayed on the post-mortem examination of the body, there can be little doubt that both the apoplexy and the paralysis were the result of inflammation set up in the brain, previously predisposed to take on such a state. This predisposition depended on the derangement of the circulation caused by the fall, and the consequent formation of the aneurisms,—a state of things most likely to occur in an intemperate individual; for it has been well ascertained that intemperance produces such a diseased condition of the arteries, that they are liable to give way in that manner which constitutes aneurism. Such being the case, it is easy to conceive that, as the circulation between the branches of the carotid and the vertebral arteries that form the circle of Willis, and which is so essential for equalising the circulation in the brain, was destroyed, the condition of the cerebral circulation must have been liable to be disturbed by the smallest derangement of the general circulation. This predisposition to inflammation was also augmented by the condition of the other vessels, namely, the branches of the opposite arteria media cerebri and the basilar

artery, all of which were greatly dilated, and their coats thickened. What was the immediate cause of the inflammation and the extravasation of blood, can only be conjectured; but from the intemperate habits of the man, it is probable that he drank too freely on the previous evening. The indisposition which he experienced in the morning was the result of the commencing inflammatory action; and to this we must refer the extravasation of blood, the effused serum, and the apoplectic seizure with its accompanying paralysis. He was also previously under the influence of the inflammatory diathesis, as the stethoscope detected the existence of acute bronchitis. It must, however, be confessed that the disease of the lungs might be secondary, a circumstance not unfrequent in apoplexy.

In reflecting upon the condition of the vessels of the brain, there can be little doubt that the softening which existed chiefly in the anterior lobe of the right hemisphere, was the result of the defective supply of blood to that part caused by the large aneurism. We know that if obliteration take place in the trunk of the internal carotid within the cranium, or in any of its larger branches, softening of the greater part, or the whole hemisphere may result; hence, when we find such an aneurism as in this case, the softening is easily explained. The substance of the left hemisphere was softer than natural, arising also from the state of the vessels. I am of opinion that the complete obliteration of vessels is not essential to cause softening of the cerebral substance. Both the cortical and the medullary tissue were softened; but, when the obliteration is confined to the smaller branches, the softening is limited to the cortical substance. Owing to the imperfect history of the case, I could not ascertain whether the softening had been accompanied with pain, or, if it existed, whether it was intermittent, remittent, or constant; or whether there was drowsiness or any partial numbness of the extremities. The senses and the intellectual faculties were im paired, as usually occurs in the first period of softening, from obstruction of the vessels of the brain. In the second period, the symptoms of inflammatory softening and that from defective circulation or obliteration are similar. We must regard, in this case, the serous effusions as altogether secondary, the result of the meningeal inflammation.

The case is interesting in a pathological point of view. It adds another to the few recorded cases of aneurism within the cranium; and it also demonstrates that these aneurisms may attain a large size. It farther proves that life may be sustained under very considerable derangement of the brain, and that organic changes within the skull are less likely to terminate quickly, than inflammatory action set up in the organ, from either external or functional causes. In no disease is the condition of

the affected organ so difficult to be determined. We may suspect sanguine extravasation when paralysis occurs; but this is not constant. As the disease progressed after the depleting measures that were adopted, the idea that extravasation had taken place became more probable; but there were no data for conjecturing the nature of the previous organic derangement of the brain.

With respect to the treatment in the present instance, and in every apoplectic attack, connected with arterial excitement, whatever may be the condition of the brain, and however obscure the diagnosis, in reference to the immediate causes of the attack, our first object is to lessen the impulse of the blood on the cerebral arteries; and if the pulse does not contra-indicate the free abstraction of blood, it should be carried to its full extent. In this case the blood-letting was not resorted to after the third day from the admission of the patient into the hospital, both because the comatose symptoms abated, and the pulse failed. The excitement was subdued, and nothing more could be expected from the farther use of the lancet. The torpid state of the bowels was also overcome; but I may here remark that the employment of *elaterium* has been too much neglected in the treatment of simple apoplexy. No other purgative, in my opinion, is so likely to maintain the beneficial effect procured from a full bleeding, without that serious depression of power, which a repetition of copious venesection always produces. The calomel was pushed with the view of aiding the blood-letting, and the purging in reducing the inflammatory action. It is, however, unnecessary to comment on the treatment; the prognosis was unfavourable from the commencement, and much experience was not requisite to pronounce that the case would terminate fatally.

London, 30, Welbeck Street.

Article II.—*Critical Examination of Dr Stark's Observations on the Urine of Pregnancy.* *By* John William Griffith, M.D., F.L.S., *Resident Medical Officer to the Finsbury Dispensary, London.*

(Communicated by Dr Golding Bird.)

The subject of the urine in pregnancy having lately engrossed so much attention, and having for a considerable period devoted myself to its examination, both in disease and pregnancy, I have been induced to offer a few remarks on the subject, referring especially to a paper by Dr Stark, in the *Edinburgh Medical and Surgical Journal* for January 1842, a short abstract of which was given in the February number of the Monthly Journal, p. 206. It appears to me that Dr Stark has been rather too hasty in adding to our list a new elementary substance, viz. gravidine.

The experiments are, for the most part, very inconclusive, and may, I think, be explained in another way. His experiments would have been much more exact and *intelligible*, if they had been throughout assisted by the microscope, which is of essential service in the examination of urinary deposits. The time intervening between the addition of re-agents, and the notation of the changes, has also been omitted, which in some of his experiments is of great importance.

In the following notices I suppose the reader to have Dr Stark's paper for reference. The "natural sediment" is stated to be wholly dissolved by boiling water, and again deposited by cooling; but the experiments performed on this sediment cannot be depended upon, unless the solution be filtered whilst boiling hot, so as to be sure of operating on it only. There is no doubt that this sediment, or that part of it soluble in boiling water, is lithate of ammonia; but in consequence of filtration not having been adopted, it is mixed with mucus, epithelium, &c. We will compare the action of reagents on the lithate of ammonia, and on the natural sediment, quoted from Dr S. He says the deposit is quite soluble in boiling water; so is the lithate; also in liq. ammoniæ, like the lithate; that muriatic acid added after solution in ammonia, gives a copious precipitate, so it does in the case of the lithate. The composition of this is not stated by Dr S.; but it is lithic acid. Sulphuric acid, added to the solution of the sediment in ammonia, gives no precipitate, but produces slight opalescence; so it does with the lithate, the milkiness being composed of very minute crystals of lithic acid. Sulphuric acid added to the sediment suspended in water, produces total solution, and faint opalescence subsequently appears; so with the lithate, the opalescence being produced by very minute particles of lithic acid. Nitric acid totally dissolves the sediment; the same with the lithate. Muriatic acid produces no *apparent* effect; but it slowly decomposes the lithate, depositing crystals of lithic acid, which obscure the liquid in the same manner as the lithate did. If these had been examined by the microscope, Dr S. would have noticed the changes going on. Acetic acid produces no effect on the sediment. The length of time here is of importance; acetic first dissolves, then decomposes lithate of ammonia, depositing crystals of lithic acid, so that if much time elapsed before the observation was made, (as the microscopic phenomena are not mentioned,) the substitution of lithic acid for the lithate, might cause the apparent want of action.[1] Liq. potassæ dissolves the sediment, as it does lithate of ammonia. Muriatic acid added to this solution,

[1] During the progress of Dr S.'s paper, we find mentioned crystals of oxalate of lime (!) and cystic oxide (!) These, if present, would be insoluble in acetic acid, and, by keeping the liquid turbid, would obscure the effect of acetic acid.

the sediment down. (Dr S.) This is not quite correct. tic acid throws down lithic acid, not lithate of ammonia. nric acid added to this solution of the sediment, does not it down; it does in the case of the lithate, but requires a time than the muriatic. Boiling in water, and the sub- t addition of alcohol, of course cannot precipitate either or albumen, as they are not present.

on of ether on the sediment.—The ether retains in suspen- number of particles: these subside (undissolved) into a gummy-looking fluid. This was soluble by boiling *with* and as the lithate gradually became decomposed, crystals ic acid were separated; (the ether here plays no part; if d be present in the ether, or none be formed during ebul- the lithate of ammonia would not be decomposed to any , although I believe mere boiling at a high temperature nt slightly to decompose it.) On cooling, a portion of the mposed lithate falls, leaving the fluid *milky;* but this milky ance is readily explained by the microscope, which proves it caused by the suspension of amorphous lithate of ammonia, lk globules. The subsequent experiments refer to the lithate ded in water, more pure than at first;—why is not acetic entioned here? The presence of lithic acid in this sediment en proved above. Dr S. also proves the presence of am- by heating it on mica. (P. 177.)

ne freed from its sediment.—"Ammonia added produces a s deposit, soluble in muriatic and nitric acid, as well as in nric and acetic acids." This is the bibasic stellar triple hate. This has been mentioned by one author as a proof he urine in pregnancy contains an excess of phosphates; nis is a mistake: urine always gives a precipitate of this phosphate with ammonia. Then there is here no deviation rdinary urine.

ire urine. (P. 178.)—Ammonia added to the urine con- g the sediment, first dissolves it, then throws down the phosphate: this of course was not soluble in the boiling , but it was so in acids. Liq. potassæ behaves to healthy containing lithate of ammonia exactly as stated.

e action of muriatic and acetic acids has been explained : here the microscope would have explained the cause of no *ent* action.

s natural sediment might have been separated from other its (in composition) in a much simpler manner than is given 179.

solubility in boiling water is its greatest characteristic. next is its giving indications of containing lithic acid and nia, both of which have been proved to be present. Dr S. that it cannot be lithate of ammonia, because any acid

precipitates it (lithate of ammonia) from an alkaline solution. Now here is a slight error: lithate of ammonia is not precipitated from an alkaline solution by any acid: it is lithic acid alone which is thrown down. Also the oxalate of lime, existing as an *urinary deposit* ("gravel") is entirely soluble in nitric acid. Again cystic oxide is insoluble in acetic acid; acetic acid is the best reagent to precipitate this substance from urine, whereas in Dr Stark's paper, it is stated to be soluble in all acids.

If Dr S. had done as I have, *i. e.* as soon as the sediment has deposited from the urine, poured off the urine and boiled the sediment in water, *filtering whilst boiling hot*, he would have separated the "natural sediment" from everything else, and have found it to consist of pure lithate of ammonia.

This "natural sediment" is stated (at p. 173) as being separated from all the other ingredients by ether, but I am at a loss to know how ether separates it, or what part the ether plays. It is only diffused through it,—only suspended by agitation and again deposited by repose.

The other experiments related to a totally different matter, composed of globules, which are separated by means of ether! (the same as the last.) Now there is not the slightest proof of identity between the globules and the "sediment:" they are totally distinct, and only possess one common property, the same as possessed by all bodies insoluble in ether, viz. *suspension in it by agitation*. I have constantly had occasion to notice globules in the urine; in fact it is a rare thing to find urine without some: the natural mucus always contains them.[1] I have not yet examined a sufficient number of specimens of the urine of pregnant women, to ascertain the constancy of increase in globules, but the irritability of the bladder in utero-gestation alone is necessarily followed by their increase.

Dr S. states that the kiestein is produced by the decomposition of the "gravidine;" now this cannot be, because if the globules and sediment are *separated by filtration, the kiestein still appears*; and the kiestein is formed in too short a space of time for decomposition to have commenced, as it is always whilst the urine is acid.

From these remarks I venture to draw the following conclusions:

1. That there exist a large number of globules in pregnant urine. (Dr S.)

2. That there exists a deposit of lithate of ammonia.

3. That a pellicle of kiestein forms on the surface of pregnant urine, as elsewhere stated.

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[1] I may take this opportunity of observing that I have noticed three very distinct forms of mucus particles: 1. The simple globule, like milk. 2. A globule not distinguishable from the pus globule. 3. An amorphous form. The first is observed in ordinary healthy mucus; the second, in irritability of the bladder and chronic inflammation, in the form of delicate opaque strings diffused through the urine; the third exists in all cases of increased discharge of mucus.

4. That neither the globules, nor the lithate of ammonia have nything to do with the kiestein.

5. That the globules and the lithate of ammonia are totally istinct; that the term "gravidine" cannot be applied to two otally different substances; and that as they can both be accounted for in a simple manner, there is no occasion for the name t all.

I was surprised to find that Dr S., and even Mr Letheby, (in late number of the *Medical Gazette*,) deny the existence of the aseous odour. I have so constantly observed this, that I conider it almost as characteristic as the kiestein. I think we can ully account for Mr Letheby's getting a putrefactive odour inead of the caseous, as he uses too high a temperature.

After all that has been written on the subject, I think we must onfess that the peculiarities of the urine in the pregnant female, except the kiestein) are not at all distinctively marked; the ormation of the kiestein is the only constant one; the lithate of mmonia, its colour and quantity, must vary according to the tate of the skin and temperature of the atmosphere. I think it s the fact of Dr S.'s not having boiled the sediment in water, nd filtered whilst hot, so as to examine the sediment and the globules (separately washed off the filter) perfectly distinctly, that as caused this confusion. To get the lithate pure it should be exmined when first deposited, before the kiestein has formed and ny of it fallen to mix with the lithate.

FINSBURY DISPENSARY,
March 16, 1842.

ARTICLE III.—*On the Treatment of the Hemorrhagic Diathesis.* *By* JAMES MILLER, Esq., F.R.S.E., *Lecturer on Surgery, and one of the Surgeons to the Royal Infirmary of Edinburgh.*

(*Read before the Medico-Chirurgical Society of Edinburgh, 1st June* 1842.)

Several interesting cases of this troublesome and dangerous isease have lately been read before this Society, and others ave been detailed in various periodicals of the day. In almost ll, the issue has been most disastrous; the treatment, though ctive and varied, proving of little effect in even retarding the atal result,—a proof that, while on many points therapeutics ave of late years advanced rapidly and surely, on this we can ay no claim to modern improvement.

To enter fully into the subject would probably require an exended range of both chemical and physiological experiment, irected towards the elucidation of the formation and actual ature of the morbid condition of the blood and blood-vessels, on

which the liability to hemorrhage depends; and it is much to be regretted, that in this age of chemical and microscopical research, some one adequate to the task has not laboured in this field so rich in promise. Meanwhile, however, an inquiry into the amount of knowledge at present attained, and an attempt to methodise the practical inferences deducible therefrom, so as to render them more available towards successful treatment, may prove not without its use; both as calculated to enable us to contend more satisfactorily with future instances of the disease, and also as constituting a sound preliminary step towards the further and more thorough investigation of the subject. To aid in the obtaining of that step, I would beg briefly to direct attention.

And, first, *as to the nature and cause of the morbid state.* For, according to the old yet true adage, "that a knowledge of a disease is half its cure," could we arrive at satisfactory issues in this part of the inquiry, our subsequent progress would be amazingly facilitated. But on this subject I am aware that we do not possess data sufficiently explicit to warrant definite conclusions; and hence may only be able to make an approximation to truth. It has been supposed by some, that the vice in question is resident in the blood, by others, in the containing blood-vessels; but it is probable that both are more or less implicated.

1. *Morbid state of the blood.*—In almost all the cases, the blood which escaped in the hemorrhage is described as preternaturally fluid; and in some it is plainly stated to have been deficient in fibrin;[1] but whether this latter statement rests on chemical investigation or not, we have no means of knowing. We have the less inclination to doubt its accuracy, however, such being the state in which we would naturally expect to find the blood under such circumstances.

This deficiency in the proportion of fibrin is doubtless one of the causes of the hemorrhagic tendency, and has been in existence long before the establishment of the solution of continuity in the solids, which leads to the disaster. But as the bleeding advances, so does the disproportion of the fibrin, as well as of the blood corpuscles; the effused fluid, towards the termination of the case, scarcely staining the bandagings, and often resembling a colourless serum.[2] From this we derive a practical

[1] "The blood, (which had been examined through a microscope,) although the man looked so strong and healthy, differed from the usual character of this fluid, and seemed to be deficient in fibrin; the globules were broken down, being, as might be called, 'diffluent.' The blood was altogether in a bad state, containing a proportion of globules with all the characters of those entering into the composition of pus." (*Liston, Lancet*, No. 816, p. 137.)

[2] In Dr Allan's case, (L. and E. MONTHLY JOURNAL, June 1842,) "for the last twenty-four hours the discharge was colourless serum."

axim of no slight importance, to be afterwards more fully ustrated,—that to be successful, we must be *early* as well as ergetic in our remedial means, so long as we have some fibrin coax into the solid form, and afford a barrier to the further cape of the already thin and fast thinning fluid.

But before proceeding farther, let us define the kind of morrhage in question. It is capillary, or, at all events, proeds only from the capillaries and the minutest ramifications of e arterial twigs. No arterial branch of any importance is inlved; bleeding from such would be comparatively but an ornary case, and easily arrested by ligature. We do not deny at arteries are subject to a similar kind of hemorrhage as that which we treat; a large wound made in a patient labouring der the hemorrhagic diathesis, would give us an example of it. Ve should then have vessels of all grades busy in parting with eir contents. The larger, however, would be arrested as usual y ligature, while from the smaller the danger would proceed; s evidenced in a case related by Dr Clutterbuck.[1] A patient a hemorrhagic tendency became affected with "white swellg" of the knee joint; a puncture of the tumour by a lancet as followed by most alarming bleeding; yet "a surgeon was und bold enough to propose amputation, which accordingly as performed, in opposition to the opinion of a more cautious ractitioner." The principal bleeding points were secured as sual, but yet "the patient bled to death, the blood continually zing from the stump in spite of all applications." In a case of Ir Wardrop's, in which the hemorrhage was induced by the inrtion of a seton, Mr W. "secured no less than nine vessels ith ligatures. Blood continued, however, to ooze from numberss small orifices over the whole surface of the wound, which very mode of treatment usually resorted to failed in arresting, nd the patient died in a few days."[2] We wish, then, to limit ur present inquiry to the capillary oozing from trifling breaches continuity, more troublesome and formidable than the gaping outh of any arterial trunk, and hitherto presenting no ill foundl claim to be enrolled among the opprobria of surgery.

In what manner do these minute vessels conduct themselves in trifling wound of ordinary and healthy circumstances? For a rief period, their cut orifices remain open, and discharge a graually lessening stream of their contents, which, in the course of few minutes entirely ceases. And the diminution and cessaon have resulted from retraction and contraction of the vessels their cut points, with blocking up of the contracted orifices, by eans of a solid plug composed of coagulated blood. In the rger of these minute vessels, this terminal plug may be seen

[1] Lancet, No. 138, p. 99.

[2] Wardrop on Bleeding, p. 14.

pouting on the surface of the recent wound, and if disturbed or removed by the finger, sponge, or forceps, the bleeding is instantly renewed; though in a fainter stream than at the first, in consequence of the now contracted state of the vessel's calibre. But slender though the jet be, it will not cease spontaneously (*i. e.*, by nature's hæmostatics alone,) until the place of the removed clot be again occupied by one of more recent formation; plainly showing that a change in the blood—coagulation—as well as in the vessels' coats—contraction—is essential to the arrest of the hemorrhage.

Now of this salutary change, the blood does not seem capable in the hemorrhagic diathesis. Some have gone so far as roundly to state, that it is then incapable of coagulating at all; and some cases would certainly seem to bear out that opinion, the discharged blood remaining thin and perfectly fluid, even after long rest and exposure to the atmosphere. In the majority of recorded cases, however, the blood is capable of a certain degree of coagulation, at all events after extrusion; but the clot is loose, porous, easily permeated by blood, and consequently of no use as a hæmostatic. A patient of Mr Smethhurst, nearly lost by hemorrhage from the alveolus, was almost choked more than once by the formation of *coagula* in the fauces.[1] In a patient of Dr Burnes, notwithstanding all efforts to stop it, "a spongy coagulum, the size of a small apple, twice formed over and obscured the bleeding points."[2] In a case successfully treated by Mr Lane, the blood was "so thin in consistence, that it resembled a mixture of blood and water as it flowed down the face; occasionally, however, it formed a distinct, but not very firm coagulum."[3] Mr Lloyd, called to a case apparently of this nature, after extraction of a tooth, had to "remove a small clot, from under which the blood oozed," in order to reach the socket.[4] Thus, at the commencement at least, of the majority of the cases, the blood, though less disposed to coagulate than usual, is yet capable of undergoing that change, at all events on exposure to atmospheric influence; but still the coagulum is imperfectly and feebly formed, delicate and loose, and not available for hæmostatic purposes; on the contrary, encouraging bleeding, by accumulating on the surface, and acting thereon as would a warm and moist sponge. At the same time, however, while we are thus debarred from laying down as a general rule, that in such cases the blood has *no* power of coagulation, yet it seems certain that the more urgent the case, the less the capability of effecting that change, whether the urgency arise from original inveteracy, or from persistence in hemorrhage after ineffectual treatment, thereby in-

[1] Lancet, No. 909, p. 618.
[2] Lancet, No. 902, p. 404.
[3] Lancet, No. 896, p. 185.
[4] Lancet, No. 919, p. 74.

lucing further deterioration of the fluid. And in some cases, the power seems wholly lost of obtaining even the similitude of a coagulum. In a recent and fatal example, reported by Dr Hay and Dr Roberts, even at the commencement of the hemorrhage, it is stated, "no coagulum was found about the mouth, or in what he had spat out, the alveolus being as clear as when the stump was first taken away."[1] And in a case where Mr Roux tied the radial and ulnar arteries on account of hemorrhage from the palm, and in which the patient of course died by continuance of the capillary oozing, not only from the original site, but also from the fresh wounds; the little remaining blood was found fluid even in the right side of the heart, and "there was no trace of any coagulum either above or below the seats of the ligatures."[2]

On what does this *diminished power of coagulation in the blood depend?* most probably on want of its due proportion of fibrin. That it is thus deficient seems to be generally admitted by all writers on the subject; and although, as already stated, we yet seem wanting in an actual demonstration of the fact, reasoning goes far to enforce the belief. Sudden loss of vitality of the blood prevents its coagulation, as in death by lightning and some poisons; but such a cause cannot be in operation here. "Ordinary coagulation depends on the fibrin of the blood, which, separating itself from the fluid in which it was previously dissolved, and during this process attracting the red particles, forms a clot more or less dense, in proportion to the amount of fibrin which it contains. This separation will not occur, however, if the amount of fibrin should be small, or its vitality low. A homogeneous mass, deficient in firmness, presents itself under such circumstances; though the solid part of this may pass into a state of more complete condensation after the lapse of a certain time. That the coagulation is due to the fibrin, and that the red particles are merely passive in the process, appears from several considerations,"[3] &c. Increased density of coagulum (what we want as a hæmostatic) is well known to depend on increase of the proportion of fibrin in the coagulating blood, as occurs in the inflammatory diathesis. But the proportion of fibrin is not to be here estimated in regard to the general mass of the blood merely, but rather in regard to the blood globules; it being only when excessive in proportion to these, that the tendency and power of coagulation become most marked. In chlorosis, for example, in which condition the globules are diminished, while the fibrin remains the same, the clot of drawn blood is firm, though small, and not unfrequently exhibits the buffy coat; and we know that

[1] Lancet, No. 965, p. 725. [2] Medico-Chirurgical Review, No. 29, p. 226.
[3] Carpenter's Physiology, p. 474.

in chlorotic patients, hemorrhage is remarkably unfrequent;[1] while in simple plethora, in which the globules are excessive, the clot is of an opposite character. Sometimes both globules and fibrin are deficient, and in experiment it has been found "almost impossible to deprive blood of its corpuscles, without, at the same time, defibrinising it."[2] This double deficiency is found to obtain in scrofula, and seems to exist also here: and between the two cachexies, the scrofulous and hemorrhagic, we will find other points of similarity. In such a state of utter impoverisation, the blood will, of course, be unequal to the efficient performance of many vital actions, coagulation among the rest.

Mere loss of blood tends to produce this deficiency of both fibrin and globules, but not in an equal ratio. At first the latter are chiefly removed; and consequently, at an early period of the case, loss of blood thus favours natural hæmostatics, by increasing the proportion of fibrin to globules, and thereby augmenting the tendency and power of coagulation; but the hemorrhage continuing, both fibrin and globules disappear—hope from coagulation then becoming more and more feeble, as the experience of such cases as those we are now treating of most abundantly proves.

But not only is diminution of the proportion of fibrin favourable to continuance of hemorrhage, by inducing non-coagulability of the blood; it also directly predisposes to it, by occasioning congestion of the capillaries. "A certain degree of viscidity has been found, by the experiments of Poisseuille, to favour the passage of fluid through capillary tubes; and thus, if the viscidity of the blood be diminished by a loss of part of its fibrin, stagnation of the current, and extravasation of a portion of the contents of the vessels will be the result. This has been fully proved by the numerous experiments of Magendie."[3] "It has been ascertained that one of the effects of a diminution in the proportion of fibrin is a tendency to the occurrence of hemorrhage or of congestion, either in the parenchymatous tissue, or on the surface of the membranes."[4] This condition of capillary congestion may thus of itself lead to hemorrhage in an unbroken texture; and in the case of a wound, if a continuance of such tendency to capillary congestion be coupled with impaired or lost power of coagulation in the accumulating fluid, we can readily understand how the amount and continuance of hæmorrhage may be thereby dangerously enhanced.

We believe, then, that in the hemorrhagic diathesis, the blood contains a less proportion both of fibrin and of globules, than in health; and that in consequence it predisposes to capillary congestion, and is more or less deficient in the power of coagulation.

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[1] Op. cit., 485. [2] Op. cit., p. 478. [3] Op. cit. p. 478. [4] Op. cit. p. 484.

2. *But the blood is not alone to blame. The capillaries and arterial tubes are doubtless deficient in their healthy properties.* Are hey wanting in the actual amount of their fibrous texture, or nerely in their contractility? We incline to the latter opinion. In dissections of those who have fallen a prey to the emorrhagic diathesis, the arterial vessels have been found attenuated in their coats—"reduced to half their usual thickness;" ut this seems more probably the result of passive dilatation, by oss of contractility, than of original deficiency of the fibrous oat, as Dr Burnes and some others seem to suppose. (*Lancet*, Jo. 902, p. 405.)[1] "That the capillaries possess a contractile ower, in a far higher degree than do the larger arteries, and nore easily excited than that of the smaller, appears scarcely to dmit of a doubt. It has been recently asserted by Schwann, hat they possess the same kind of fibrous tissue in their walls, s do the large vessels; and this cannot be regarded as improable. That the contractile coat of the capillaries has for its ffice to regulate the calibre of the vessels, can scarcely be doubtd; but any general permanent contraction would only occasion n obstacle to the circulation, as is shown by the effect of stimusting injections, which if thrown into the vessels before their itality has been lost, will not pass through the capillaries."[2] In ealth, then, these capillaries, by their own inherent contractility, egulate their calibre so as to favour due circulation within them, nd if need be, can exert it to an unusual extent, so as to arrest he passage of fluid within them *in toto*, as doubtless they do in he ordinary cessation of hemorrhage from a recent wound. But f deficient in this contractility, or altogether deprived of it, there ill be a consequent and proportionate failure in this most imortant hæmostatic means. The capillaries will then be but assive tubes, through which the blood continues to flow; and hat such a state of the capillaries and arterial tubes exists in he hemorrhagic diathesis, both reasoning and actual observation n dissection, sufficiently demonstrate.

Thus, to constitute the hemorrhagic diathesis, we have not nly the blood flowing through dilated and non-contractile tubes, ut sent thither in greater volume than in ordinary and healthy ircumstances, thinner and more fluent than in health, and little r at all able to arrest its own course by assuming the solid form. n addition, the capillary tunics are not only thin, but weak, and asily lacerable; a slight bruise produces serious ecchymosis;

[1] In the case of Joseph Lancton, Mr Gatcombe, in tying a wounded artery, observed it to be "thin in its coats, like a vein rather than an artery." And on the fatal termination of the case, Mr Blagden, in examining the branches of the external carotid, states that "their coats appeared to be thinner than usual, and nearly transparent."—*Medico-Chirurg. Trans.* vol. viii. p. 227.

[2] Carpenter's Physiology, p. 416.

coughing may induce hæmoptysis; a sneeze brings on epistaxis; diarrhœa occasions copious evacuations of blood by the rectum; and extravasations are not unlikely to follow but slight causes within internal cavities. The whole circulating system, besides, is usually in an irritable and excited condition; the pulse being considerably above the healthy standard, and the heart acting with unusual force and sharpness. Not unfrequently, a febrile condition at the same time exists; and when it does exist, it increases the intensity of the diathesis.[1]

Such being the apparent causes of the disorder, we are now prepared to turn our attention to the *cure*.

1. *Can we amend the faulty condition of the blood?* Were the red globules in excess, we could easily diminish their amount, thereby favourably increasing the proportion of the fibrin, by venesection; and thus we should at once readily obtain blood more disposed to firm coagulation. But the globules are already themselves deficient, and consequently from that mode of treatment, (what may be termed the negative increase of the proportional amount of fibrin,) no hope is to be entertained. Whether we will or not, however, bleeding goes on from the part, at first drawing more from the globules than the fibrin; and during this brief and early period of the case, a comparatively favourable opportunity is thus afforded for coagulation. Of that we are bound to avail ourselves, as it flits by; but it is plainly a condition of the system which we dare not seek directly to imitate or obtain. As the bleeding continues, both fibrin and globules disappear, ultimately little else than serum remaining in circulation; and during that part of the case, all efforts towards arrestment must plainly be especially hopeless.

Can we effect a direct and actual addition to the amount of circulating fibrin? We have already hinted at a considerable similarity between this hemorrhagic condition of the system and that of scrofula. In both, there is a lamentable want of fibrin. In the latter form of disease, albumen is constantly being substituted for the more valuable plastic material; and in the treatment, it is a principal feature to increase the power of elaborating albumen into fibrin; in other words, to increase the supply of the latter. A similar mode of procedure, therefore, with a like object in view, will be available in the hemorrhagic diathesis. The general powers of the system are to be invigorated by nutritious diet, &c. This is very suitable in struma, when plenty of time is afforded for such treatment taking effect. But in the hemorrhagic diathesis we have comparatively but a very brief period for action, and can repose no confidence in aught so dilatory. Nevertheless we are not to transgress the principle, and are to be

[1] Brit. and For. Review, vol. ix., p. 247.

guided by it in the dietetic portion of our treatment. The patient is to be plentifully supplied with good air, and with a full allowance of nutritious, yet not stimulating food. He will be thirsty from loss of blood, and glad to slake his thirst with aqueous fluids. But he ought not to be allowed to do so. These would but add to the serum, and we have too much of that already. As the bleeding proceeds, faintness comes on; and wine, brandy, and cordials, are the usual remedies. These will do but little good in the matter of the fibrin; and by freshly exciting and accelerating the circulation, will destroy any chance of benefit we might have obtained by the approach to syncope favouring coagulation.[1] In terror of such inopportune excitation of the arterial system, other practitioners follow a mode of treatment diametrically the opposite, allowing the patient nothing but the weakest aliment, and that even in starving moderation; forgetting, that with such a run upon their stock of capital, the treasury will soon be wholly emptied, unless active measures be adopted to keep up the supply, and if possible, with a more solid and more sterling currency. The system of diet, then, in the protracted cases, we conceive ought to be full and nutritious, yet by no means stimulating. As a prophylactic remedy, the dietetic mode of treatment promises to be of much value, but it is unequal to meet the actual emergency, there being no *time* thereby to amend the deficiency of fibrin.

Can this be done by inducing an *inflammation*? That the quantity of fibrin is invariably increased during active inflammation, has been satisfactorily shown by M. Andral—the increase commencing at once, and being strictly proportional to the advancement and intensity of the inflammation. To this result the existence of inflammatory fever is not essential; it is the local inflammation itself which causes it; yet the inflammatory fever being usually proportionate to the amount and intensity of the local action, will consequently be almost invariably accompanied by, though not causing, this increase of fibrin. And it is important further to observe, that a mere febrile condition, unattended by an inflammatory action, so far from increasing the amount of fibrin, has a precisely opposite effect. In idiopathic fever, for example, the amount of fibrin is invariably found diminished, and the patient prone to hemorrhagy,—another strong reason why a stimulating system of treatment, as by wine, brandy, &c., is not to be adopted. An active local inflammation, then, and the less accompanying fever it has the better, (actual excitement of the general circulation being manifestly

[1] In a case of hemorrhagic diathesis, narrated by Dr Duncan in the Annals of Medicine, the patient used a "bottle of port wine daily," yet continued to sink till hat system of treatment was abandoned. (*Lancet*, No. 974, p. 149.)

inimical to our object,) will *speedily* increase the proportion of fibrin, and thereby promote the formation of coagulum. But *mere* coagulation is not what we desiderate; it is the formation of a firm and dense clot; and it is just this form of slow yet sure coagulation that an inflammation will afford. And this leads us to remark, that even in the emergency of the hemorrhagic diathesis, when every moment is of importance, we are not to seek for rapid coagulation, which is usually loose and porous; but for rather a slow completion of that process, whereby a more solid and efficient clot will be obtained.

Are we then to induce this influence in the site of the hemorrhage? No. By doing so we should amend the general state of the circulating fluid, but sadly deteriorate the local, increasing the volume of blood, and inducing a tumultuous circulation, in a part which has no power to control it;—an aggravation of the bleeding must inevitably follow. Besides, by wilfully inflaming the part, we should render it intolerant of pressure, which, as we think, is our most trust-worthy item of local management. An irritant applied at some distance from the bleeding-point, however, so as rapidly to excite a superficial inflammation on a comparatively unimportant part, might not only obtain the desired increase of fibrin in the general mass of blood, but also have a derivative effect on the actual source of the hemorrhage, and so fulfil a twofold indication towards its arrest. This plan, therefore, of directly amending the proportion of the fibrin, seems both feasible and safe, and consequently worthy of trial. And, on the principle of revulsion, is it not possible that *dry cupping*, employed at some distance from the bleeding point, might have the effect of at least diminishing the hemorrhagic flow?

But, turning from such direct interference with the fibrin, have we any means by which, no matter how, *we can promote satisfactory coagulation of the blood*, and thereby use them as hæmostatics? *Acetate of lead with opium*, given internally, has long been famous in this respect, and that not undeservedly. Dr Elliotson has shown that the lead can be given in heroic doses, and even for a considerable time, without any untoward result,[1] with the simple precaution of keeping the bowels freely open—an indication which we will find to be otherwise of much importance in the treatment of the hemorrhagic diathesis. As a general astringent, according to Dr Christison, "no remedy yet known, equals in efficacy the *pilulæ plumbi opiatæ* of the Ed. Ph.; each of which contains 3 grs. of the acetate of lead, and half a grain of opium, and of which, from two to six may be given in the course of the day, according to the urgency of the symptoms."[2]

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[1] Lancet, No. 310, p. 607.

[2] Dispensatory, p. 705.

This remedy doubtless has the power of calming the general circulation; probably it increases the tendency of the blood to coagulate; plainly it has a depressing influence on the nervous system, and we know that this "favours coagulation of blood in the vessels;"[1] besides, there is good reason to believe that a tonic or astringent effect is exerted by it on the capillaries themselves; and thus it justly maintains a claim to our attention as a valuable means of combating the hemorrhagic diathesis. In the great majority of cases, it can be given freely with perfect safety. Should it be found to disagree, it may be conveniently superseded, at least for a time, by the *sulphas aluminæ et potassæ*, in doses of 15 or 20 grains and upwards—a powerful, and in all cases safe astringent.[2]

Nauseating remedies will moderate the heart's action, and they seem to have besides a powerful effect in arresting hemorrhage. That during sickness tendency to firm coagulation of the blood is increased, is a fact well attested by experience. Thus it is probable that bloodletting often succeeds as a hæmostatic; but by the suitable administration of nauseating remedies, the same good effect is obtained, while the valuable fluid is yet saved to the system; and in the case of the disease of which we are now treating, such saving is obviously precious indeed. Cautious and small doses then, of ipecacuan or tartrate of antimony, producing and maintaining nausea, will assist in the hæmostatics, not only by moderating the general circulation, but also by favouring coagulation in the capillaries. But this treatment ought not to be pushed to actual emesis, as has been proposed.[3] All the good effects of the medicine are obtained by an action short of vomiting, and that effort is well known to be by no means a sedative; it shakes the frame to its centre, and often produces powerful reaction, even in those systems which injury or sickness may have reduced almost to the lowest ebb.

But it may be said "the patient gets sick enough from the bleeding alone, and the exhibition of nauseants would consequently, at the best, be but an act of supererogation." True, the patient becomes sick in the progress of the case, *but not at the right time.*

The advantage of skill and experience is not so much to invent remedies, as to know *when* they ought to be administered. By the time nausea has been occasioned by mere loss of blood in this affection, that fluid has lost much of the fibrin in which it was from the first sadly deficient, and cannot now avail itself of the lull in its circulation, to be converted into the solid form. But induce an artificial nausea at an early period, while

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[1] Carpenter's Physiology, p. 476.
[2] Dr Lynch, Prov. Med. and Surg. Journal, May 29, 1841, p. 162.
[3] Mr Trenor, Dublin Journal of Medical Science, January 1840, p. 477.

there is yet fibrin and a power of coagulation; if possible, take advantage of that period when the bleeding has as yet but diminished the volume of globules, leaving that of the fibrin intact—and then, but not later, we may hope for a happy result;—another reason for *early* as well as energetic practice in the treatment of the hemorrhagic diathesis. Besides, during the febrile paroxysm which usually attends on the hemorrhagic crisis, the nauseating treatment will plainly tend to remove this, at the same time that it favours coagulation, and opposes capillary congestion.

In the case of hemorrhage after tooth extraction, when binding up of the jaws is necessary, efficiently to obtain the all-important pressure, a passage for the internal remedies by the mouth is to be contrived, as in fracture of the jaw; and failing that, their exhibition will be by the rectum. And it is very plain, that vomiting, from whatever cause, is, under such circumstances, to be carefully avoided.

If we can diminish the amount of the serous portion of the blood, the fibrin remaining, will we not thereby assist the blood in its assumption of the solid form? In theory, such a plan promises fairly. A smart dose of elaterium, obtaining a serous discharge from the bowels, might have a most salutary effect,—not the worse for having a depressing action on the nervous influence, we having already seen that so coagulation within the vessels is favoured. At a later period, its exhibition would require caution, it being now of importance to oppose and retard exhaustion. But still its exhibition is practicable, by administering support at the same time, adding as it were to one part while we draw from another, just as it has been lately proposed to combine the exhibition of tonics and stimulants with the frequent repetition of tobacco enemata in tetanus.[1] But, leaving theory and coming to facts, we find that *the sulphate of soda* has, on more than one occasion, been found of signal service in the hemorrhagic diathesis. Dr Otto of Philadelphia, and Dr Hay, Fellow of the Masachussetts Medical Society,[2] are loud in its praises, seeming to regard it almost as a specific; but, be it remarked, *only when administered in such doses as to purge actively*. By M. Andral, sulphate of soda acting on the blood is considered the best means of retarding its coagulation, and consequently of obtaining a firm clot when it is ultimately formed.[3] The inflammatory clot is tardy but dense; and so is that of the sulphate of soda. When coagulation is rapid, the clot is loose, has a large proportion of serum entangled as it were in its substance, and expels little or none of it by subsequent contraction; "on the

[1] Mr Bullock, Med. Gazette, July 2, 1841, p. 582.
[2] London Medical and Surgical Journal, 1808, p. 69, and 1815, p. 9.
[3] Carpenter's Physiology, p. 480.

her hand, if the coagulation be slow, the particles of fibrin em to become more completely aggregated, the coagulum is nser at first, and its density is greatly increased by subse-ient contraction."[1] That is the kind of coagulation we want, slow, dense, and efficient; in many, if not most of the cases of morrhagic diathesis, we have rapid and loose coagulation with-t arrest of hemorrhage. Besides, one of the best antidotes poisonous effects resulting from the internal exhibition of etate of lead, is the sulphate of soda;[2] so that this remedy is eful in the treatment of the hemorrhagic diathesis on three unts. 1. By obtaining serous discharge from the bowels, the ass of blood is indirectly acted on so as to favour solid coagu-tion; 2. Suitable coagulation is also promoted by direct admix-re of the salt with the blood; and, 3. All bad effects are by it viated, which might otherwise proceed from lead previously lministered. The lead and sulphate of soda must not be given gether, however, with a conjunctly remedial object; as the for-er would be precipitated in an insoluble form. In a case men-oned by Dr Allan, much benefit was derived from smart pur-ation by sulphate of *magnesia*, showing that the *purgative* action probably not the least important.

II. Let us now turn our attention *to the condition of the capillaries.* We have already stated the probability that the acetate of lead as a directly astringent effect on the capillaries, besides its action n the blood and nervous system. *Opium*, we believe, has a more irectly tonic effect on the extreme vessels; and it is by such ction that its beneficial effects in gangrena senilis have been at-mpted to be explained.[3] Besides, its exhibition will have a ost salutary influence in quelling that general nervous tumult n the circulation, which is so sure a follower of excessive loss of lood. The happy combination of two such remedies, in the *l. plumb. opiat.*, cannot but be regarded, then, as constituting most powerful remedy in the hemorrhagic diathesis; acting irectly and favourably on the blood; calming the heart's action, nd the general circulation; subduing the nervous influence; and rrecting, in no slight degree, the degeneracy of the capillaries emselves.

In many of the recorded cases, the patients are said to have boured under "rheumatic pains,"[4] previous to the actual out-reak of the disease. It is not easy to believe that such pains ad a genuine rheumatic origin; for in that disease we know the brin of the blood is not deficient, but excessive, and the ten-ncy to dense solidization marked, as shown by the buffy and pped appearance of the blood after venesection. To hazard an

[1] Op. cit. p. 477. [2] Christison's Dispensatory, p. 704. [3] Skey.
[4] Medico-Chirurgical Review, vol. xxix. p. 227.

hypothesis, it would seem more feasible to refer the pain called rheumatic, to a perverted action in the minute vessels themselves, (we will not call it inflammatory,) which leads to further derangement of their functions, rendering their coats still less contractile and more lacerable, and of which perverted action pain in the parts is but one of the natural results. If this be so, we can assign another beneficial action to the opium administered under such circumstances.

Styptics will act beneficially by having a local and astringent effect upon the capillaries. There are many styptics. Of spirits of turpentine I have received a high character from my friend, Dr Vanzandt of St Louis, who states that in extreme capillary hemorrhage from cutaneous and mucous surfaces, he has again and again, after the failure of others, obtained the best success. And other practitioners speak also in its praise. Mr Nasmyth of Edinburgh seems inclined to trust mainly in the acid solution of the nitrate of mercury; and his acknowledged eminence and experience entitle his opinion to much consideration; but it is to be remembered, that in many cases of annoying hemorrhage after extraction of teeth, in which he has found this remedy effectual, there may have been no hemorrhagic diathesis. Creasote has often proved itself a valuable styptic. The nitrate of silver not only may be supposed to constringe the textures to which it is applied; but by forming a coagulum of its own, as it does by immediate action on the fluids with which it is brought in contact, it acts powerfully, for a short time at least, as a hæmostatic, and thereby fulfils the important indication of obtaining a *dry bed* on which we lay our neatly fitting compress of lint or cotton. On account of this twofold action, I am inclined to give it the preference. It is used lightly, and not held and pressed on the part for any time. Thus employed, it is no caustic, in the strict sense of the term,[1] otherwise I should not be heard in its praise; for I believe

The Cautery, actual and potential, and especially the former, not only to have no virtue as a hæmostatic in this disease, but certain to inflict almost irretrievable injury. The cautery applied in ordinary hemorrhage, to which pressure and ligature are inapplicable, is satisfactory enough; as it sears the surface, it puckers and twirls up the previously open vascular mouths, and moreover mechanically shuts them by a dense coating of eschar, which adheres firmly to the subjacent textures at every point, completely preventing hemorrhage; and when this separates in a day or two, by means of the usual ulcerative line of separation,

[1] Nitrate of silver used as a caustic, is similarly injurious as the cautery, as in Mr Craig's case, (*Lancet*, No. 974, p. 149,) where hemorrhage recurred with increased violence after separation of the eschar.

sels are all permanently shut and consolidated by lymph gress of organisation. But not so in the hemorrhagic dia-. The vessels are unable to pucker and contract; the r is comparatively soft, and will not adhere; if it do adhere, mperfectly, and for a short period; the parts have no power plastic formation necessary for permanent occlusion; and sult is, that the cauterisation either does not arrest the ing at all, or it does so only in part, besides mystifying and ring the source of the hemorrhage; or if the cessation be story at first, the flow returns in a few hours with re-ed vigour. The bleeding surface is increased; the part is inflamed, and more blood sent thither; and, perhaps worst , it is fast becoming wholly intolerant of pressure. Should ure, notwithstanding, be attempted to be persevered in, must ensue. Pressure on an ordinary ulcerating surface, low, is most likely to produce hemorrhage at all times; and the hemorrhagic diathesis is in operation, bleeding must be inly aggravated. Theory thus speaks in a most condemna-tone of the cautery. What says stern fact? In an early d of Drs Hay and Roberts' case, the actual cautery was ed "without benefit;"[1] and a more suitable hot iron was plied on the same day, "but with no good result." Zacutus led a terrible and desperate hemorrhage which had resist-e red iron;" and in a case mentioned by Plater, where "all of remedies" were employed, hot irons among the rest, the ing was only arrested by death.[2] In a fatal case after tooth ction, treated by Mr Blagden and Sir B. Brodie, use was of the cautery, "which restrained the hemorrhage for six ; but in the evening it returned as violent as before. The lus was again stopped, and the cautery applied twice, but bleeding continued notwithstanding.[3] In Dr Allan's case,[4] stated, "at 4 P.M. I applied the actual cautery. . . I saw him at 8 P.M., and found the oozing the same." And e case of an old lady who nearly lost her life by hemorrhage tooth extraction, but who was ultimately saved by continued ure, under the able management of Mr Liston, many years ago, ng after recovery from that accident she died of ascites and al dropsy),—I well remember to have seen the actual cautery ed more than once, with that energy and accuracy which to be expected, and yet without producing any check to the rrhage. In short, I believe the record of such cases will ably declare the employment of the cautery to be not only cient but prejudicial; and that, in the great majority of cases

[1] Lancet, No. 965, p. 752.
[2] L. and E. MONTHLY JOURNAL, March 1842, p. 268.
[3] Medico-Chirurg. Trans. vol. viii. p. 226.
[4] L. and E. MONTHLY JOURNAL, June 1842.

in which it has been employed, death has resulted. I do not deny, that in many cases of obstinate hemorrhage after tooth-drawing, or other comparatively slight injury, the cautery has been successfully applied. But these were not examples of the hemorrhagic diathesis. The bleeding had a merely local origin, and cauterisation succeeded there, as it does when applied to the face of a stump, to a bony cavity, or elsewhere, when ligature and pressure happen to be inapplicable or inefficient. And without any perverted diathesis at all, we can readily understand that from an alveolus bleeding may often prove troublesome; just in the same way as it is invariably severe from incisions made in necrosis; the vessels being imbedded in dense unelastic texture, which will not permit retraction, opposes contraction, and favours a patent state of the cut orifices. And, were it not that the vessels are stretched and torn by evulsion, and not cut in removal of the tooth, I believe that *ordinary* hemorrhage would more frequently follow the operation than it does. It is plain, then, how important it is that we should carefully distinguish between such cases of ordinary and mere local origin, and those which depend on a constitutional vice; seeing that, in the one, the cautery may be demanded, and its use prove profitable; while, in the other, it will not only fail, but injure. For not only does it not arrest bleeding in such cases, for the reasons formerly given, but on the separation of the eschar, which is speedy, the bleeding surface is enlarged, and the blood comes, too, with a better will. Besides, let either patient or surgeon be unsteady, (and how often must not this be the case?) and then in all probability the application will be made wide of its mark; for example, in being carried to the alveolus, it may singe the lip, cheek, or gum, and by the separation of *these* eschars, just so many additional hemorrhagic surfaces will be created, as happened in the case of Drs Hay and Roberts. Further, the swollen, spongy, infiltrated, painful, and fragile condition of the parts, resulting from even the best used cautery, disarms us of our chief local remedy, pressure: it can no longer be safely and surely applied. And although we have already seen reason to believe that the establishment of an active local inflammation anywhere, will effect a satisfactory change in the condition of the blood, yet if it be created by the cautery at the bleeding point, the general benefit will be completely merged in the local disaster; for experience tells us, that the occurrence of the asthenic, infiltrating, unhealthy inflammation, of which alone such parts are capable, is a most untoward complication of the case. There is a greater determination of blood to the part—its circulation is excited, the bleeding surface is enlarged—and consolidation by effused lymph, if it proceed at all, does so most slowly and imperfectly. The bleeding, consequently, is not only not arrested, but is actually

increased. Thus, in Dr Hay's case, we find two distinct periods of hemorrhage, as stated by him;[1] the first, that of the simple kind, and which seemed "to have almost entirely ceased on the 29th December; the second, commencing on the subsequent day, when he complained of pain in the gums and face, and which was the beginning of that deranged condition of the system, which steadily increased, and terminated his existence, under symptoms resembling those of sea scurvy," that is, oozing of blood from all the inflamed, ulcerated, and sloughing surfaces. The one period, simple; the other, inflammatory. Dr Burnes[2] relates the case of a man afflicted with the hemorrhagic diathesis, who cut his thumb on a pane of glass: bleeding was temporarily arrested; but, "in a day or two, *inflammation of the hand* supervened, when bleeding again commenced, and continued to ooze, in spite of styptics, and other means employed by two respectable surgeons in attendance."

Thus, then, the cautery, not in any point beneficial, and both primarily and secondarily pernicious, is not to be thought of as a remedial means in the hemorrhagic diathesis. Mr Roberts states, "In all the cases that have come under my notice, I never saw the application of the actual cautery of much (any) service: still in extreme cases we are bound to employ it."[3] To the former part of that statement we assent, disagreeing totally, however, with its conclusion. And we think we have made out a sufficient case against the cautery, to displace it from the confidence of the profession, which it seems yet unworthily to hold, as a remedy in such cases. Nitrate of silver we have spoken of favourably it is true, but not as an escharotic. And if the nitrate of mercury be employed, we should advise it to be diluted from the form of caustic, so as to be simply styptic and astringent.

On *pressure*, we would mainly rely, as the local treatment adapted to the hemorrhagic diathesis. Having applied the nitrate of silver gently, so as to obtain its minor effect, and thus, by a temporary cessation of the bleeding, secure a dry bed on which the compress is to be laid, we lodge a portion of lint, accurately adapted to the hemorrhagic surface, and over this another and another, increasing in size, so as to make a graduated compress, whereby pressure can be applied with power, and at the same time with great accuracy. For we believe that when pressure does fail, it is because it has been inaccurately applied, *i. e.* not duly directed on the bleeding point, either by blood becoming interposed, or in consequence of original mal-adjustment

[1] L. and E. MONTHLY JOURNAL, p. 268. [2] Lancet, No. 902, p. 405.
[3] Lancet, No. 965, p. 753.

of the apparatus. A dry compress alone is efficient; and should we find the lint becoming saturated with blood, the oozing still continuing through the dressings, we must at once remove all, and re-adjust them with still greater attention to nicety of application. Supposing the bleeding surface to be situated on a leg or arm, the limb below the compressed point must be uniformly supported by a bandage, otherwise congestion, followed by ecchymosis as well as œdema, will most probably result. But while the pressure is uniform and accurate, it must not be severe; for one of the characteristics of the disease is, that pressure is not easily borne; it is apt to occasion "great distress, pain, throbbing, and irritability."[1] Severe pressure, pertinaciously employed, would produce inflammation, ulceration, sloughing, one or all, and of course aggravate the malady. But if the compression be begun moderately, and regulated by prudence, more especially if it have been both accurately and *early* applied,—before the part has become inflamed and swollen by other less appropriate and effectual remedies,—such untoward consequences need not be apprehended. On the general surface, compression can be managed by an ordinary bandage regulating and maintaining the compress. In the case of the alveolus, a little peculiarity of dressing is required. Sponging out the cavity, a pointed piece of nitrate of silver is passed to its bottom, in contact at the same time if possible with its sides, and held there momentarily. It is quickly withdrawn; and while the bed it leaves is still dry, this is rapidly and accurately filled by a thin strip or strips of lint, pushed carefully and firmly down by a probe, director, or other implement suitable for the purpose. Over the top of the thus tightly filled alveolus, is placed a dossil of dry lint; over this a wedge of cork, with a similar one on the opposite side, their thick ends looking forwards; the jaws are then firmly shut, and retained so immoveably, by turns of a bandage, in the same way as for fractured jaw, a central interspace being left for the giving of food and medicine, and for the free circulation of cool air in the mouth. The pressure proving successful, the dressing will of course be left undisturbed for a considerable period. In leech bites, mere punctures, superficial wounds of the face, &c. compression will be most conveniently as well as effectually obtained, by firm application of the twisted suture.

Exposure to atmospheric influence is favourable to coagulation on the bleeding surface; but the obtaining of this is plainly incompatible with the paramount indication of pressure. However we ought to supply the patient with cool and free air, to have the mouth partially open as just advised, and in all situations to content ourselves with merely as much covering as is sufficient for

[1] Mr Ray, Lancet, No. 914, p. 825.

retention of the compress, eschewing all other dressings whatsoever.

The continued application of *styptics* is also inconsistent with pressure, and being far less important, is to be abandoned.

On behalf of the efficacy of pressure, facts are not wanting. In the case of Drs Hay and Roberts, the periods of intermission, and the occasional gleams of success were due to pressure. M. Jourdain prefers pressure. M. Duval quotes a case from Arnaud Gilles, "which was saved by the use of pressure produced by the half of a bean."[1] In the cases mentioned by Mr Liston,[2] "the hemorrhage was generally at length commanded by pressure." In one urgent example, Mr Kendrick "at last succeeded in arresting the bleeding by the firm application of pledgets of cotton-wool soaked in the strongest spirits." In a case detailed by M. Marjolin, "continued compression for several days" proved successful.[3] In two cases Mr Smethurst succeeded in arresting the hemorrhage by continued pressure with his finger,[4] after cautery and other means had failed. In Mr Lane's case,[5] "the intermissions were obtained principally by pressure." Mr Lloyd details several cases of obstinate and serious bleeding after tooth extraction, in which pressure proved successful. And he adds, "I have never had occasion to use other means than pressure; and think that when well and perfectly made, it will be found quite sufficient."[6] Dr Mantell states, that "in a child seven years of age, after all other methods had failed, and a fatal termination was expected, constant pressure was effected by a gold plate accurately adapted to the gum by a dentist, and the bleeding was effectually suppressed."[7] In the case of a gentleman, from whose forehead Mr Liston extirpated a small tumour, styptics, and "even the application of the actual cautery, failed to arrest the bleeding. At length, by having kept up pressure with the finger upon a piece of cork for several hours, the hemorrhage ceased."[8] And in Mr Liston's case, to which we formerly alluded, pressure succeeded, after repeated failure by cautery. In short, I believe that investigation will prove that in every successful case, pressure, early and judiciously employed, has been found one of the most important agents of the cure. Various modes of compression have been employed,—by cork, putty, sponge, plaster of Paris, the fingers, the tooth reintroduced, a plate of metal made to fit, &c.; but plain lint, well applied, affords equal prospects of success with any of the foregoing, and with the manifest advantage that it can at all times be easily obtained.

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[1] L. and E. MONTHLY JOURNAL, March 1842, pp. 268, 269.
[2] Lancet, No. 816, p. 137.
[3] Med.-Chir. Rev., vol. 29, p. 227.
[4] Lancet, No. 909, pp. 648-9.
[5] Lancet, No. 896, p. 185.
[6] Lancet, No. 919, p 75.
[7] Lancet, No. 969, p. 900.
[8] Lancet, No. 816, p. 137.

Cold has by some been proposed, but we think improperly. The part is already vitally weak, with scarcely power enough to sustain efficient pressure, without either ulceration or sloughing. The primary effect of cold will depress that vitality still further; and the hemorrhagic tendency of the second or reactive effect, which is almost certain to occur, is very obvious. Besides, cold is not favourable to coagulation.

Deligation of the principal arterial trunk leading to the part, is manifestly hopeless. In bleeding from an ulcerated aperture in an arterial branch, when there is no hemorrhagic diathesis, success will follow the application of a ligature to the main branch, even at a distant point,—ligature of the humeral, for example, for bleeding from ulceration involving the palmar arch; but as formerly stated, in the disease we are now considering the hemorrhage is capillary, and cannot be so affected. Recent experiments of M. Robert show, that after deligation of the carotid, for example, the flow in the artery is immediately resumed, though with gentler impetus, and in smaller bulk, on the distal side of the vessel; that, in fact, the interruption to the current is but momentary—an abundant proof that there is more than enough to feed the capillaries with an abundant supply. Besides, granting what is impossible, that the deligation of the principal artery does arrest the original hemorrhage, the patient's life would still be compromised by bleeding from the recent wound. The evidence of fact on the question is very plain. M. Roux tied the radial and ulnar on account of bleeding in the palm, arising from the hemorrhagic diathesis; his patient died "in the course of the evening;" "the blood oozed not only from the palm of the hand, but also from the two incisions of the fore-arm which had been made during the operations."[1] Sir B. Brodie tied the carotid in a hemorrhagic case, after extraction of a tooth; "but without effect; the gentleman lost his life." "The wound made in the operation bled very little at first, but in the course of a few minutes after the operation, it began to bleed profusely. No single vessel could be observed bleeding, but there was a general oozing from its surface."[2] And such doubtless has been, and will be the untoward result of all such erroneously conceived operations.[3]

Neither will general inclusion of the bleeding surface by ligature succeed. The part has not plastic power sufficient for salu-

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[1] Medico-Chir. Rev., vol. 29, p. 226.

[2] Medico-Chirurg. Trans., vol. viii. p. 227.

[3] A minor misfortune, were time granted, would be certain and rapid ulceration, at the deligated point, in consequence of the perverted condition of the arterial coats. Mr Gatcombe "applied a ligature round each of the divided ends of the bleeding vessel, but it gave way behind the ligatures, and the bleeding returned."[1]

[1] Med.-Chir. Trans., vol. viii. p. 228.

tary co-operation with the ligature; and as in Mr Wilson's case,[1] "ulceration very soon takes place and a fresh bleeding occurs."

Last, not least, in our list of remedies comes *transfusion*. The manner in which this is likely to benefit is plain enough. We have blood lamentably deficient in both globules and fibrin, especially the latter. But bad as that fluid is, we have lost, and are loosing much of it that we cannot spare; and if in room of this inferior liquid, we could obtain an immediate and satisfactory supply of blood, in every way favourable for salutary purposes,—equal in amount, or nearly so, to that which has been lost,—the change would be a manifest improvement. We should then have the blood in our favour, and only the vice of the capillaries to contend with. That this happy change can be readily effected by skilfully conducted tranfusion is equally plain; one important indication being attended to, however, viz., that the person from whom the blood is obtained, shall not only be in sound health, but free from plethoric tendency; plethora entailing an excess of red globules, a state which we rather wish to avoid—our acquisitiveness being chiefly directed towards the fibrin.

Two disadvantages attend the operation. 1. It is difficult and troublesome in performance; but by patience and skill that may be got over. 2. There is a risk of bleeding continuing to a dangerous extent, from the wound made to reach the vein; but experience is not so very unfavourable on this point as we might imagine. "Wounds of the larger blood-vessels, such as that in venesection, are usually found to heal as readily in hemorrhagic individuals as in any other set of patients. This, however, is not always the case."[2] Hemorrhagic patients have perished by the venesection wound.

Such risks will justly deter us from having recourse to transfusion, until other means have been tried and have failed. But when *in extremis*, we ought surely to afford the patient the chance, and that no improbable one, to be derived from this *dernier resort*,—the more especially as we have at least one good fact in its favour, afforded by Mr Lane.[3] His patient, a boy aged 11, had bled for six days, from a wound made in the operation for strabismus, and, when at death's door, was saved by transfusion from the vein of a "stout healthy young woman." "The wound at the bend of the arm healed in about ten days, and the boy, after being wheeled out in a hand carriage in the open air, soon recovered his appetite and strength, and in about three weeks went into the country, whence he returned in a few days perfectly well."

But lest we seem to be endangered by a very plethora of

[1] Wardrop on Bleeding, p. 15. [2] Med.-Chirurg. Rev., vol. xxix. p. 228.
[3] Lancet, No. 896, p. 165.

remedies, and knowing that one weapon skifully handled is more truly defensive than an unwieldy panoply of arms, let us endeavour to make a judicious selection from our *armamentarium medico-chirurgicum*.

1. *As to internal remedies.* We would administer the acetate of lead and opium; with cautious doses of antimony or ipecacuan so as to induce and maintain nausea, short of emesis; and sulphate of soda would be occasionally exhibited in smart purgative doses. At first, we would give nothing in the shape of food or drink, being wishful to promote the state of nausea and depression, as favourable to the hemostatic result. But should the bleeding continue, our first and strongest effort having failed, we would then support the strength and circulation by nutriment, frequently given in small quantities, as soup, animal jelly, &c., avoiding aqueous fluids, as well as wine, brandy, and all other stimulants, unless driven to the latter at the eleventh hour and in despair.

2. *Of the local remedies*, we would hold accurate yet moderate pressure on the bleeding point, with uniform support of the lower parts when necessary, to be by far the most important; at the same time favouring as much as possible the application of atmospheric influence, and never trusting in a soaked and oozing compress, but instantly removing it to make way for a more accurate re-adjustment. Experience is yet wanting to attest the propriety of irritants and dry cupping, applied at a safe yet convenient distance; the one with an inflammatory, the other with a simply revulsive object.

3. Failing in the above treatment, we would unhesitatingly have recourse to transfusion, at a period sufficiently early to afford a fair prospect of success.

Haste and hurry are not to be mistaken for energy. To fly from one remedy to another is to give a chance to neither, and none at all to the patient. We are to choose a good line of conduct and adhere to it, not acting *per saltum*, as it were—with no crowd of remedies jostling one another, and each perhaps busy in undoing what its neighbour and predecessor has just been constructing.

But as in almost all cases, prevention is better than cure, have we no means of averting the hemorrhage by endeavouring to remove or mitigate the diathesis, when circumstances lead us to apprehend its existence? An examination of the various cases on record leaves little or no doubt that in each affected individual, the tendency fluctuates in its intensity; that it is hereditary, and chiefly in the male line, though not wholly so, as has been by some asserted; that it discloses itself at a very early age; and that usually it abates as the age advances. "Several have died in their youth; and in those who survived to more mature years,

the hemorrhagic disposition seemed to become less and less decided."[1] At one time a patient has lost a good deal of blood from a slight injury, but not so as to occasion any alarm, either then or subsequently;[2] at another time, the stream is staunched with difficulty; at another, life is endangered; at a fourth, life is lost. And in some patients, periods of remission and exacerbation are sufficiently distinct. Thus, in the cases related by Dr Dubois of Neufchâtel in Switzerland, in whose vicinity the "*bluters*," as they are termed, are especially numerous, we are told that "all were subject to frequent attacks of pain and swelling, with ecchymosis of the wrists, ankles, and knee-joints, attended with fever; (probably preceded by it);[3] the complaint usually lasted about a fortnight, and then disappeared with the subsidence of the swelling and removal of the ecchymosis." If nature herself, then, have thus the power of controlling the disease, at certain times at all events, may we not be able to assist in her good work? Doubtless, we may. Although far from saying that the disease is at all identical with scrofula, yet we have seen that in several points the two diatheses closely resemble each other; and that the means suitable to the one, are also likely to prove beneficial to the other. The antistrumous or tonic treatment we have admitted to be of minor importance in the management of the actual hemorrhage, there being no time then for its operation so as to ameliorate the elaboration of the blood, as well as the condition of the solids; but from its continued use as a prophylactic measure, surely the best hopes may be entertained; and, of course, frequent and smart doses of the sulphate of soda would not be omitted. Dr Allan's patient "had been in the habit of taking a solution of sulphate of magnesia for years, about once a-week, as an active purgative, which did more good than any thing else."[4] This is a subject, however, too wide for discussion on the present occasion.

Another diathesis to which the hemorrhagic bears no slight resemblance in several particulars, is the scorbutic. And in this we know that citric acid has a most beneficial influence. It is not improbable, therefore, as has been suggested to me by my friend Dr Douglas Maclagan, that this medicine may be advantageously employed in the prophylactic treatment of the disease now under consideration.

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[1] Med.-Chirurg. Rev., No. 29, p. 227.

[2] In Dr Allan's narration of cases, we are told, that "the first child had been cut neatly with a knife in the hand, and the blood stopped in the usual manner." Yet this child subsequently perished by uncontrollable hemorrhage from a superficial injury.

[3] We have no doubt this febrile condition is intimately connected with the hemorrhagic crisis, preceding, and in some measure causing it, in the manner explained by Hagendie.

[4] L. and E. MONTHLY JOURNAL, June 1842, p. 504.

In the treatment of the hemorrhagic diathesis, we have endeavoured to direct attention to the following points:—1. *Energetic treatment at the outset*, for then only have we the blood favourable for coagulation, and the parts tolerant of pressure. 2. *The propriety of internal remedies*,—astringents, sedatives, nauseants, and hydragogues,—to obviate, if possible, the morbid condition of the blood; and administered either by the mouth or anus, according to circumstances. 3. *Abandonment of escharotics*,—especially of the actual cautery, being at the best only occasionally and temporarily beneficial, and ultimately highly pernicious. 4. *Pressure*, preceded by a styptic, early, accurately, uniformly, and yet moderately applied, the best local means of treatment. 5. *Irritants and cupping*, at some distance from the bleeding point, not unlikely to prove beneficial; the former by creating an inflammation in a comparatively unimportant part, and thereby increasing the amount of fibrin in the general mass of blood; the latter by averting the sanguineous determination to the source of hemorrhage. 6. *Careful avoidance of simply febrile accession*; which would have the effect of exciting the circulation, at the same time diminishing still further the amount of fibrin. 7. *Patient persistence* in the foregoing system, without abrupt or frequent change of remedies. 8. In protracted cases, *nutritious, yet non-stimulant diet*. 9. Failing ordinary means, *transfusion* is to be attempted. 10. The question of *prophylaxis*, not irrational; the tendency being once known, its removal ought at least to be attempted.

In conclusion, I beg to express a hope, that this interesting subject will soon obtain further and more satisfactory elucidation; and that our brethren the physicians will lend their aid thereto, remembering that their province, as well as ours, is concerned; for a man labouring under the hemorrhagic diathesis is equally likely to lose his life, by bleeding implicating the brain or other internal organs, as by hemorrhage from an injury of the surface."[1]

Note.—To Dr David Hay's excellent paper on this subject, published in this Journal (March 1842,) I have been much indebted; especially for reference to recorded examples of this disease. But owing to the circumstance of his case having been doubly reported—in this Journal by himself, and in *The Lancet* by Dr Roberts—I regret that I have been led into some confusion as to its details; for an explanation of which, I beg to refer to the report of the last meeting of the Edinburgh Medico-Chirurgical Society,

[1] "One died of hemorrhage from the loss of a tooth, the other two from falls, in which they received blows on the head, not sufficiently severe to have produced much mischief in a sound state of the system, but which in them was followed by extravasation of blood within the cranium."—*Lancet*, No. 896, p. 187.

ıich I understand is to appear in the present Number of this ›urnal.

23, York Place, 2d June 1842.

RTICLE IV.—*Corroborative evidence of the beneficial uses of Morphia in Strangulated Hernia. By* John Lyell, Esq., *Surgeon, Newburgh, Fife.*

The following case of strangulated hernia tends to strengthen nfidence in the use of sedatives in that serious affection, as tely reported in the "Monthly Journal," by Dr Bell, and hers.

I was called, on the 6th April last, to visit J. M., a stout middle- ed man, between 40 and 50 years of age, for what was termed violent bowel complaint; and found him labouring under severe mptoms of strangulated hernia. On examination, the protrud- l portion of intestine was felt of considerable size, descending ı the left side, and distending that half of the scrotum. He ıd been subject to the occasional descent, for nearly a twelve- onth, but usually found relief on assuming the recumbent pos- re; in the present instance, however, the protruded bowel failed return, for the space of nine hours previous to my visit. I ed every effort of the taxis, both by wile and perseverance, to duce the tumour, but without effect. To ease the agonizing rmina, he had taken a small teaspoonful of laudanum before my ıit, but rejected it by vomiting. I administered three grains of ium, which he kept; and sent for the dry muriate of morphia. this I gave him half a grain in solution every half hour, watch- ; its effects, till he had taken three grains. He was now con- lerably narcotised; the vomiting had ceased, and he was com- ratively free of pain, when I again resorted to the taxis, but ly with the effect of softening the tumour, without dislodging from its place. Finding that I was still baffled in my attempts reduction, and perceiving, notwithstanding the quantity of ›rphia taken, that the patient might yet be depressed some- ıat farther with safety, I thrice administered a grain and a half half-hourly succession. Shortly after the last of these doses, luction took place of its own accord.

Besides the evidence afforded by the above narrative in favour morphia as a powerful remedial agent in strangulated hernia, is important to notice the great quantity of the medicine taken. e patient had never to his knowledge taken opium in any form ore, the laudanum swallowed previous to my visit being :en by advice. Within a few hours he had three grains of

opium and four and a half of muriate of morphia, all which seemed necessary to put him thoroughly under the influence of the drug; nor was the medicine of inferior strength, for from the same parcel, I find it to act in the ordinary dose. This resistance to the operation of the medicine might arise in part from constitutional peculiarity, but also in part, I conceive, from the violence of the intestinal spasms, to allay which, a considerable portion of its influence went, ere it acted on the system at large. Every one practising medicine must have remarked the enormous doses of sedative medicines used in nervous or spasmodic diseases, ere they induce their specific action. The rule is, I think, *to employ the morphia in half-grain hourly or half-hourly doses till the patient is fairly narcotised.*

May 10, 1842.

ARTICLE V.—*Sequel of a Case narrated in the Number for October 1841, entitled, "Case of Lumbar Abscess probably connected with the Kidney." By* THOMAS WILLIAMSON, M.D. Edin., *Physician to the Leith Dispensary.*

In a former number of the MONTHLY JOURNAL (Oct. 1841), I described a case which was at that time under my observation. To my paper, entitled, "Case of Lumbar Abscess, probably connected with the Kidney," I refer those readers who may feel interested in the history of this very rare case. As during the lifetime of the patient, any opinion as to the true nature of the case could only be hypothetical, my present purpose is to complete its history, by describing the appearances presented upon an examination of the body after death. It may perhaps be proper to remark, that the general health of the patient seemed upon the whole improving, from October 1841 till the end of March 1842. During this period, the fistulous lumbar opening continued to discharge daily, a varying quantity of well-formed pus. As the woman was not in a condition of life to receive, at her own house, that degree of attention which her case demanded, she was induced, about the beginning of May, to enter the Royal Infirmary of Edinburgh, under the charge of Professor Syme, where she ultimately sank.

For the following notes of the autopsy, I am indebted to the kindness of Mr Peacock, pathologist to the hospital.

Autopsy.—"The body was not greatly emaciated. The lungs were adherent on both sides, and slightly consolidated from old pneumonia. The heart was healthy; the lower two feet of the intestinum ileum were of an intense dark colour, and the mucous membrane was covered with a layer of coagulable lymph. The

right kidney was large and flabby, of a stone colour externally, and displaying a granular deposit of a similar colour within, the papillary bodies being very small. The sygmoid flexure of the colon adhered closely to the parietes of the abdomen on the left side. The *left kidney was of a very large size*, covered with a firm fibrous capsule, closely adherent to the posterior surface of the abdomen, and distended with purulent matter. On a section being made, the only portions which bore any resemblance to the natural texture, consisted of a thin layer around the expanded pelvis and calyces, in which much pus was contained. In one of the latter a large calculus was firmly impacted, which projected into the pelvis in two different directions. This calculus weighed two drachms thirty-six grains, and was apparently composed of oxalate of lime. A considerable quantity of fat was contained within the fibrous tunic of the renal capsule. The opening by which the abscess had burst externally, was traced to the posterior surface of the kidney, and apparently entered its pelvis. The bladder contained a considerable quantity of purulent matter. The left ureter was much dilated; the bladder was healthy."

In formerly detailing the case, I alluded to the circumstance of bloody pus having been at one time voided from the bowels in considerable quantity. From the fact, of the sygmoid flexure of the colon having been after death discovered closely adhering to the parietes of the abdomen, we may perhaps be justified in forming the conjecture, that this portion of the intestine had at that particular period suffered perforation from its contiguity to the affected kidney, and been afterwards closed up by the sanatory powers of nature.

LEITH, May 6, 1842.

ARTICLE VI.—*Case of Triplets.* *By* A. H. DAVID, M.D. Edin., &c.

(Communicated by Dr Philip Maclagan, Staff Assistant Surgeon.)

I was requested, on the evening of the 21st April 1842, to see a woman who had been two hours in labour, and whom the midwife (an ignorant old Canadian woman,) could not deliver. On examination, I found the breech presenting with a hand hanging quite out of the passage, evidently showing that it was a case of twins. I succeeded easily in reaching the feet, and she was delivered of a healthy female child. During the whole of this time the arm remained hanging out, but receded as soon as the first child was born; and the right shoulder presenting, she was, after some little time, delivered of a dead male child—connected with

the cord of which, and which came away at the same time, was the double placenta:—when she was immediately seized with fresh labour pains, and a third dead male child came away.

The third child was in no way whatever connected with the two first, which presented the ordinary character of a twin case, with the exception of protruding of the right arm of the second child during the delivery of the first one.

The woman had attained her full time, and the three children were all perfectly formed, and weighed 6½ lbs. each, and were 16½ inches long. It was her seventh accouchement. She is making a good recovery.

THREE RIVERS, CANADA EAST, April 22, 1842.

PART SECOND.

REVIEWS.

IN consequence of our inability to insert the numerous extracts we have made from our contemporaries in a single number, and at the same time publish several reviews now ready, we defer the latter class of articles; believing that a copious periscope is more acceptable to our readers, than anything else we can present them with. When the large type departments of the Journal are unduly expanded in one number, they must be curtailed in the next, to enable us to make up lee-way with our periscope and medical news.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

On the Existence of Vegetable Parasites in Aphthæ. By Dr Vogel, Munich.

Dr Vogel, like Schoenlein, Gruby, Gibert, and others, has seen vegetable parasites in different diseases of the human body; lately he has found them on the buccal and œsophageal mucous membrane of an infant who died of aphthæ fifteen days after birth. The mouth and œsophagus, as far as the cardia, were covered with an aphthous eruption. On examining this under a microscope of 220 powers, true confervæ similar to those seen and described by Schoenlein as occurring in impetigo, were distinctly visible. In these parasites, two elementary bodies were recognised: 1st, Small round bodies, with and without a central nucleus. Sometimes these were isolated, and sometimes they were grouped like mould on yeast; they had a diameter of from 1-300th to 1-500th of a line, were colourless, and not acted upon by water, ammonia, or acetic acid. 2d, Filaments differently arranged, of a slaty colour (*ardoisés*) swollen at different points, either in the middle, or at their extremities. Occasionally they were articulated. Several of them were seen distinctly to take their origin from the round bodies: some of them were more than a line in length, and in general their diameter was about 1-600th of a line. They were likewise unaffected by water, ammonia, or acetic acid.—*Allgemeine Zeitung fur Chirurgie, &c.;* and *Gazette Méd. de Paris*, April 1842.

On the Minute Structure of Bat's Hair. By Mr J. Quekett.

After alluding to the views entertained by Hunter, Mandl, Busk, and others, as to the formation and mode of growth of hairs generally, the author stated that his attention was directed to those of the bat tribe, in consequence of having on more than one occasion used a knife to separate them from the skin; on subsequent examination it was seen that the curious markings on their surfaces, which render these hairs so interesting, were destroyed in some parts, but were still present in others. By repeating the scraping process, it was found that minute scale-like bodies were detached, which were not unlike, in shape, the scales on the wing of a butterfly, but were very much smaller, and presented no trace of striæ on their surfaces; it was on the arrangement of the scales, and on their being more prominent in some species than in others, that the beautiful appearance of bat's hair depended. The scales might be procured either by scraping the hair with a knife, in a direction from the apex towards the root, or more easily by pressing them between glasses previously moistened by the breath. Many of them appear-

ed to terminate in a quill, like that observed on the butterfly's scale; some few were flat, whilst others were curved so as to fit the shaft of the hair, and presented a serrated edge. The scales were absent near the bulb, but abounded in all parts of the shaft situated above the skin; and when removed from many of the larger hairs, the fibrous nature of the shaft, and its cellular interior were well displayed. Mr Quekett spoke of the hair of an Indian bat, of which a small portion had been given him by Mr Powell, in which, without any preparation, the scales could be beautifully seen, both detached and still adherent to the shaft; and he was led, from repeated observation, to consider a bat's hair as composed of a shaft invested with scales, which are developed to a greater or less degree, and vary in the mode of their arrangement in the different species of these animals; and concluded by stating, that bats resembled quadrupeds principally in their mode of reproduction, and birds in their mode of progression, but resembled both in the structure of their hair.—*Proceed. of Micros. Soc. of London, as reported in Microscopic Journ.*, Dec. 1841.

Acarus in a Pustule.

Mr George Busk exhibited a species of the genus *Acarus*, obtained from a pustule on a sailor's leg, which appeared to be a new species. The disease was contracted at Sierra Leone, by wearing the shoes of a West Indian. The matter was referred for further investigation.—*Proceed. of Micros. Soc. of London, as reported in Microscopic Journ.*, Dec. 1841.

Absence of Uterus; Malformation of Genital Organs; Malposition of Kidneys. By Dr Boyd, Lecturer on Practice of Medicine.

The patient a widow, aged 72; latterly became childish.

Abdomen.—Kidneys of usual size and appearance; right one in *iliac fossa* below cœcum; left kidney in pelvis below psoas muscle, resting on sacrum, rather to the left of median line. Its artery appeared to be the principal terminating branch of left internal iliac. Renal capsules in their usual position, resting on crura of diaphragm, on either side the spine. Uterus and Fallopian tubes were not present. Right ovary presented the natural structure. To its free extremity, a small oval sac was attached by a thin neck; a round ligament connected the ovary to cellular tissue, behind the neck of bladder. Situation of left ovary occupied by a globular fibrous tumour, connected also by a round ligament as the right ovary. External parts of generation presented the usual appearance. A *cul de sac*, about half an inch deep, occupied the place, and was all that existed of vagina; mammæ well developed for so old a person.—*Edin. Med. and Surg. Journal*, p. 289, April 1842.

Case of Absence of the Uterus. By M. Cramer.

A woman, 30 years of age, who was married at the age of 23, being in great distress at having no children, requested a consultation with M. Cramer. Upon examination, he discovered that there was no uterus. The genital parts externally were well formed, and the vagina, which was the length of a finger, terminated in a cul de sac. The only remarkable circumstance in this case is, that the woman had as much venereal appetite as is usual, and that at the monthly periods she had frequently epistaxis, hemoptysis, and various local congestions.—Abridged from *Annales d' Obstétrique*, March 1842.

Physiological Observations on Double Uterus. By M. Dumas.

The author, at the end of a case, which was published in the "Journal de la Societé de Médecine Pratique de Montpellier," reports many cases of a similar nature, and draws from them the following conclusions:—

1st, Menstruation may continue from the empty uterus, while the other contains an embryo.

2d, The two uteri do not influence each other to such a degree, as that the empty one should be always under the immediate influence of the other which is fecundated.

3d, The woman may be a virgin as regards the left one, and with child in the right, and *vice versâ*. She may be at the full time with the one, and in labour, while with the other she is not near her period.

4th, Superfetation may take place in cases of double uterus with double neck and os uteri, and also in cases of double uterus with single neck and os uteri.

5th, Notwithstanding the absence of anatomical proof of the existence of superfetation in cases of double uterus, its possibility ought to be admitted in legal medicine.

6th, In well marked cases of double uterus, there will be an inclination to the same side that the fertile womb is on; and all the symptoms will be slightly different from those observed in a case of single uterus.

7th, Although it cannot be laid down as a principle, that each cavity of the double uterus can become so developed, as to be able to contain a fœtus at the full period, yet we can believe in frequent abortions.

8th, The double uterus, when enlarged, renders labour and the expulsion of the after-birth difficult, and facilitates the laceration of the soft parts.

9th, Thanks to the form observed by M. Martin St Ange, (in which the cavity of the neck of the uterus communicated with that of the body, by a narrow canal thirteen millimetres in length,) we can explain the retention of the secundines, and the difficulty experienced in their extraction, when the canal which retains them has not previously been sufficiently dilated.—*Gazette Méd. de Paris*, 4th Feb. 1842.

Conclusions of M. Cruveilhier with regard to the Sounds of the Heart.

From some experiments recently made by M. Cruveilhier, he thinks that the two sounds of the heart arise at the root of the aorta and pulmonary artery, and depend on the motions of the sigmoid valves; that the first sound, which corresponds to contraction of the ventricles, depends on the repression of the sigmoid valves; that the second sound, accompanying the dilatation of the ventricles, is caused by the spreading out or expansion of the same valves by the retrograde column of blood.—*Med.-Chir. Review*, Oct. 1841; *Dublin Journ.*, Nov. 1841.

Commencement of Ossification after Birth. By Dr Rodenstab.

A child without a cranium was delivered by the forceps. It was born alive. A fortnight after, points of ossification were developed in different parts of the head, and in two months the cranium resembled that of a new-born infant. The child (a boy) who is now three years old, does not differ at all from other children of his own age, except that the anterior fontanelle is still very large.—*Gazette Méd. de Paris*, 12th Feb. 1842.

BOUISSON ON THE MICROSCOPIC CHARACTERS OF THE BILE.

In order to determine the microscopic characters of human bile, or of any of the higher animals, an amplification of 250 diameters must be employed, and the liquid should exist in a certain degree of concentration. Cystic bile, from a person previously subjected to a long abstinence, answers the best. The microscope developes three elements:—

1. Plates of yellow colouring matter, slightly tinged with green, of variable size, and generally irregular.

2. Geometric corpuscles of crystalline appearance, less considerable in number than the plates of colouring matter, with which they are sometimes united. These corpuscles are cholesterine in a state of suspension, disappearing under the action of ether.

3. Globules of variable quantity, sometimes disposed in small coherent masses, at others associated with the lumps of colouring matter, to which they appear to serve as media of union. These globules belong to the mucus of the gall-bladder.

From the above, and other observations, the author concludes, that the colouring matter is not entirely dissolved in the bile, but that a part is naturally precipitated; that the cholesterine, which, from the observations of Chevreuil, has been thought to exist in the bile in a state of dissolution, is really in a state of suspension; and, lastly, that the mucus facilitates the adhesion of these two elements of the bile.—*Gazette des Hôpitaux*, and *Microscopic Journal*, June 1842.

MUELLER ON A PECULIAR MORBID PARASITIC FORMATION WITH SPECIFIC ORGANIZED SEMINAL CORPUSCLES.

The disease here described was first observed in the cellular tissue of the orbit of a young pike, in the substance of the sclerotica, and between it and the choroid. It consists of cysts from one-fifth to one-half of a line in diameter, with very delicate walls, and containing a whitish substance, which is composed of very small granules, with molecular motion, and of innumerable corpuscles, very like spermatozoa, but quite motionless. These corpuscles have an oval body and a tail. The body has a general resemblance to an elliptical blood-globule, and is about as large as the blood-globule of the pike, like which also it has two surfaces, and a thick edge. In its interior there are always, at the opposite extremity to that whence the tail proceeds, two rather long vesicles, whose smaller ends, converging at the end of the corpuscle, are there united, and thence lying symmetrically on it, gradually diverge to their larger extremities. Besides these vesicles, the corpuscles contain a transparent fluid. The tail of the corpuscle is a filament like those of spermatozoa, three or four times as long as the oval part, and sometimes bifurcated. It appears to be a prolongation of the wall of the corpuscle; the cavity of the latter is not continued into it.

In the pike, the cysts, with such corpuscles as these, are found only in the orbit; but in several other river-fish, cutaneous eruptions are sometimes met with, consisting of vesicles with corpuscles differing from those just described, in not being caudate, but resembling them in containing the two oval diverging vesicles; and since his first observations were made, the author has found them in cutaneous eruptions in a number of fish, as well in those of his own country as in those of other parts of Europe, Brazil, North America, the Nile, &c. On the skin, the vesicles are most common in the *Zander* (of which the author does not give the Latin name, but which we find translated as the *perch-pike*), and in this the mode of development of the corpuscles has been observed; for among a great number of them, there

e found some which show the two diverging vesicles separated and enlarg-
l, and lying free in the interior of the corpuscle, and other examples in
hich two corpuscles lie near one another, surrounded by one very pale
ell, and each presenting all the characters of the simple corpuscles, together
ith the rudiments of diverging vesicles in each. So that the mode of de-
elopment of the corpuscles is in all probability this: The diverging vesicles
e the germs of new corpuscles; and as they become developed, they swell
p, separate, and lie in pairs within the cavity of the corpuscle, which is
ansformed into the thin-walled cell containing them. Then, as they are
st further developed, the maternal cell dissolves, and they become free,
ch as a separate corpuscle.

The author regards this as a remarkable example of the propagation of a
sease by a living *Seminium morbi;* it seems to hold an intermediate place
tween the acknowledged parasitic entozoa and epizoa, increasing by dis-
ct ova, and the cells of ordinary morbid structures increasing by the
velopment of their nuclei, and of one cell within the other.—*Müller's
rchiv. Heft. V.* 1841, quoted in *Brit. and For. Med. Rev.*, Jan. 1842, and
icroscopic Journal, June 1842.

On Entozoa and Parasites.

(Reference to the following, p. 239, et seq. Valentin's Repertorium, 1841.)
ivet on Cysticerci. *Häring* on a case of Cysticercus cellulosa in the con-
nctiva of a girl seven years of age. *Michéa* on two cases of Acephalocysts
the brain. *Cruiveilhier* on Acephalocysts of the liver, and especially of
he spleen. *Weitenkampf* on the passage of *Blasenschwäanzen* (?) with the
rine. *Wymann* on Filaria in the bronchi of a sheep. *Lee* on Filaria pa-
illosa in the anterior chamber of the eye of the horse. *Müller* on Distoma
the hollow of the spinal marrow of the fœtus. *Mæsson* on a worm found
the bubo of a woman thirty-six years of age. *Skripitzin* on Pulex pene-
rans. *Brunzlow* on the Acarus of the itch.—*Microscopic Journal*, May
842.

On the Occurrence of Triocephalus Affinis in the Tonsil of a Man.

At a post-mortem examination of James Flack, of the 75th regiment, at
he Army General Hospital, Fort Pitt, Chatham, one specimen of this ento-
oon was found embedded, on cutting into the left tonsil, which was consi-
erably enlarged, and in a gangrenous sloughy condition. This species,
rst described by Rudolphi, has not, according to this observer, been hither-
o discovered in the human subject. On submitting the specimen to exami-
ation under the microscope, it was found to be a female. It is preserved
the museum of Fort Pitt.—*(Editor.) Microscopic Journal*, May 1842.

On the Ova of the Distoma Hepaticum. By Mr Gulliver.

The physiology of the common Liver Fluke is extremely interesting, on
ccount of the connection which this parasite has with a very frequent and
atal disease of that useful animal, the sheep. If we obtain, says Mr G.,
rom the bile-ducts of the sheep, some of the larger ova of the entozoon,
nd subject them to careful examination, it will be found that the cyst of
he ovum presents a very clear outline, the continuity of which is uninter-
upted, except at one end, where a well-marked *operculum* may be seen.
The size of these ova differs considerably; their average length is about 1-250th
f an inch, and their breadth 1-400th. The interior of the cyst is occupied

by granular matter, often contained within secondary and more delicate cysts or cellules, generally of a circular figure, and occasionally having within them a third still smaller cyst. The diameter of the latter is about 1-4000th of an inch; and of the secondary cysts 1-1500th of an inch is a common size, although their magnitude is very variable. The granules within the cells or cysts also differ much in size, but they are very commonly about 1-8000th of an inch in diameter. When the ova of the distoma are compressed forcibly, the operculum is lifted up, or even separated entirely, and the granular matter extruded, with its containing cells or cysts generally broken. The operculum does not appear to exist in the smaller and immature ova. Whether what is commonly called the ovum of the entozoon, may not be a cyst containing numerous ova within it, and furnished with an operculum, to allow of their extrusion when mature, and fit for propagation, appears to Mr G. to be an interesting question. At all events, it should be ascertained if the cysts be discharged with the dung of the diseased sheep, whether the granules have escaped or not; and whether they are to be found in the pasturage of those localities, where the entozoon is sometimes known to be propagated so quickly, as soon to infect entire flocks of sheep. Mr G. could never see any thing like a small fluke in the outer cyst, at any period of its growth, although the operculum was often observed just ready to open and give exit to its contents, as above described. The granules may possibly be regarded as yolk-globules, in which case Mr G. apprehends the numerous secondary cysts, or cells, must be considered as so many different yolks.—*Proc. Zool. Soc. Lond.*, March 10, 1840.

Note on the Respiration of Birds. By Marshall Hall, M.D., &c.

In the new edition of M. Flourens' admirable work, an account is given of an experiment in which the cerebrum and cerebellum being removed, and the pneumogastrics divided in a pigeon, the respiration still continued.

Now, it is well known that the respiration in birds, as in insects, is *diffused*. It is ascertained that the different segments of the insect possess distinct nerves and nervous centres (analogues of the medulla oblongata) for respiration. This is not the case with birds; but

1. If the air-cells throughout the body be, like those of the lungs, supplied with nerves;
2. If these nerves be derived from the spinal nerves, like the other nerves of the general frame; and
3. If these spinal nerves possess the *excitor* property of the spinal nerves in other animals;—

If these things be, then the result of the experiment is precisely what the theory of the reflex nature of the respiratory acts would have led us to anticipate.

When, in mammalia (especially the young), the cerebrum and cerebellum are removed, the respiration continues as a purely reflex action, exerted principally through the medium of the pneumogastric nerves; when these are divided, in addition, a few and rare acts of respiration occur from the influence of the trifacial and spinal nerves. In birds these spinal nerves are as really excitors of respiration as the pneumogastric itself; under their sole influence, therefore, respiration may continue for hours.

A series of experiments illustrative of the relative value of each of these parts of the nervous system would be highly valuable.

There is no reason, from any facts which we yet possess, to think that the medulla oblongata is the *primum mobile* of respiration. As the *secundum mobile*, the key-stone of the reflex arcs, its office is most clearly established.—*Lancet*, May 21, 1842.

PRACTICE OF PHYSIC AND PATHOLOGY.

On Simple and Double Pneumo-Thorax. By Dr Puchelt, jun.

In the *Medicinische Annalen*, Dr Puchelt has published a case of double neumo-thorax, which he finishes with the following conclusions:—

1*st*, The duration of a case of double pneumo-thorax is much shorter than ne of simple. In the first, it may last for a few days; in the second, for ome months, or even for a year.

2*d*, The commencement of pneumo-thorax is characterised, in general, by sudden pain in the affected side, and by great dyspnœa. However, both f these symptoms may be wanting.

3*d*, The pain in the side, which takes place during the course of the disease, may become very violent. It is a pleuritic pain.

4*th*, In the double, the general state of the patient is less marked by collapse than in the simple pneumo-thorax. It is more distinguished by a sense f suffocation.

5*th*, Dyspnœa is inseparable from the double, while in the chronic pneuno-thorax it is hardly distinguishable.

6*th*, The affected side being dilated, the phthisical appearance is effaced, which makes the diagnosis difficult in the double pneumo-thorax.

7*th*, The organs adjacent to the chest are displaced, especially the heart nd liver.

8*th*, Percussion over the diseased side is very clear and tympanitic; it nay, however, be dull, and even normal in some places.

9*th*, It is almost impossible to indicate the level of the liquid by percussion.

10*th*, The causes, according to Skoda, which give rise to a sound sometimes tympanitic, and sometimes clear, depend on the greater or less distention of the walls of the chest.

11*th*, It is not only the air and fluid contained in the chest, which modify percussion, but likewise the adhesions existing between the pleura of the ungs and parietes, and of these again, with masses of false membrane.

12*th*, Metallic tinkling is not pathognomonic of the disease; it is found lso in large tuberculous cavities.

13*th*, Metallic tinkling is much more distinct in pneumo-thorax than in uberculous cavities.

14*th*, In pneumo-thorax, it is found most frequently in the middle, and owards the posterior part of the chest, and over a great extent of surface; while again in a cavity, it is towards the upper and anterior part of the ung, and over a much more limited space.

15*th*, There are two kinds of metallic tinkling; the one, "*bullaire*," resembles a clear sound produced by the head of a pin being struck lightly against a thin plate of metal; the other is the metallic echo of the voice, cough, or *rdle*.

16*th*, The "*bullaire*" metallic tinkling is produced by the passage of air across the pleural effusion, (if the pulmonary fistula opens below the level of the liquid,) or across the liquid found in a perforated tuberculous cavity, (if the opening in the lung is below the level of the pleural effusion,) and ought to be attributed to the collision of the fluids momentarily separated by the passage of the air.

17*th*, The development of this phenomenon can only take place when a permeable bronchial tube opens into the cavity.

18*th*, The metallic echo is only the simple resonance of the voice or cough n the pleural cavity filled with air and very little fluid.

19*th*, When the pulmonary fistula opens above the level of the effusion, and the cavity with which it communicates is small and dry, it does not produce the "*bullaire*" metallic tinkling; and again, if the bronchial fistula is far from the periphery of the lung, the metallic echo is not produced.

20*th*, The chemical analysis of the air in the pleura communicating with the bronchi, contains very little or no oxygen, a little carbonic acid, and a great deal of nitrogen.—*Gazette Méd. de Paris*, 12th February 1842.

Sketch of the Treatment of Small-Pox. By Dr Miguel Munoz of Mexico.

Dr Munoz says that small-pox is not endemic, but occurs periodically in Mexico at intervals of 16 years; and that he has never been able to see or hear of a cow labouring under the vaccine or variolous pock. The following is his explication or pathology of the disease. "It appears probable that the first action of the variolous miasma is of an irritant nature, affecting principally the external and internal surfaces of the body; that from the external surface the irritation is communicated to the nervous system, and to the arterial from both surfaces; that the combined irritations of the skin, lungs, nerves, and arterial system, evidently occasion inflammation of the several surfaces and of the blood, the gradual progress of which at length occasions the eruption, which he holds to be *symptomatic* and not *critical*. The respiratory organs being more susceptible to the irritative action of the morbific gases, are also the first to feel the contagious miasma of the small-pox, and they are likewise the last to regain their normal state of health, from which arise the precursory symptoms of catarrh, hemorrhages from the nose, the obscure pneumonia, the disposition to membranous angina, the redness and increased heat of the face, shoulders, and breast, which symptoms, along with the increasing sensibility and irritation of the skin, produce the restlessness, weariness, flying pains, anorexia, thirst, general fever, and, finally, the eruption, which prevails most on the face, breast, and arms, from the greater irritation of the skin of these parts, and their proximity to the inflamed mucous surface of the lungs." In the present epidemic almost every one, whether vaccinated, or having had previously small-pox, suffered from bronchial irritation with redness of the skin of those parts. "Thus we see that the skin, for repeated times, supports the irritation of the variolous atmosphere, though it suffers its virulent effects only once. Not so the lungs and the blood, which possess a more exquisite sensibility, without which they could not perform their important functions, which nature has destined them to do."

The treatment he adopts is the tepid bath, night and morning, and sometimes three times a-day; the duration of each bath should be from a quarter to half an hour for adults, and from ten to twenty minutes for children. The temperature of each is from 88° to 92° of Fahrenheit. For each adult he orders a small cupful of barley water, acidulated with cream of tartar and sweetened with sugar, every hour, and for children, the same decoction, only in table spoonsful. They may have cold water *ad libitum*. The primary fever disappears from the 4th to the 7th day, when small papulae appear, generally very benign, on account of the phlogosis of the skin being reduced by the baths. The earlier in the disease the baths are had recourse to the better. The bowels are to be kept open by emollient enemata. About the 4th day cataplasms at the heat of the body, made of lettuce, should be applied night and morning to the breast and right hypochondrium, and when the papulae make their appearance, if the fever is much increased, six or eight ounces of blood should be taken from adults, from the breast and throat, by leeching, and three or four from children. If there is diarrhœa, no cream of tartar or sugar must be mixed with the barley water. The

linen should be changed, if possible, every morning. If the pustules have come forward and maturated, the baths should be changed to tepid fomentations of the hands and feet, and great care should be taken not to excoriate the skin. When the pustules are at maturity, they may be opened by fine needles, and the matter gently wiped away by soft cloths soaked in oil. The only useful remedy is free air when they begin to desiccate. From the 20th to the 25th day the patient is generally restored to health, and he may return to his usual diet and mode of life, taking care not to expose himself to the variolous miasma for some time. Four cases are given as treated by Dr Munoz, and they were cured in 7, 12, 6, and 8 days by the resolution of the disease. Several extracts follow from works published on small-pox by Mexican physicians; two of them contain tables of the cases treated, which we shall give. The first is from Dr Romera's statistical and therapeutical work on this disease. "159 people were afflicted with small-pox, whose ages varied from 14 days to 23 years; of these only 15 were vaccinated. 68 had confluent pox, 139 were cured, and 20 died; being about 1·7 of the recovered; 128 of them were treated by the tepid bath, according to Munoz's plan." And again, in a report on this disease by Dr Pascua, 163 persons had suffered from small-pox, "from birth to the age of 13 years; of these 123 recovered, and 40 died, being about 1 to 3·3; 140 were cases of confluent pox, and various grave diseases, as typhus and pneumonia affected many of them at the same time." Dr Romera says, "I have not been able to assure myself of the absolute resolution of the small-pox by the baths, but I observed that those patients who began to use them as soon as they were attacked by the primary symptoms, only underwent the variolous fever, or the pustules proved to be very few and small, so that they removed more speedily, and none of these died;" and again, after speaking of the difficulty of using the bath in private practice, he remarks, "I fervently hope that the regulated use of this powerful agent, in all inflammatory and eruptive diseases, will be found, in future, to be one of our principal resources against such complaints."—Abridged from the *Prov. Med. and Surg. Journ.*, 4th Sept. 1841.

On the Nature and Treatment of Common Toothache. By T. Wilkinson King, Esq.

Mr King lays it down as a principle, that carious teeth ought not to be removed, and that their loss is fraught with mischief. Toothache is, in his view, a disturbance of the balance of the capillary circulation in the central cavity of the tooth, whether produced by local irritation or disturbance in the general system. It is connected with decay in the hard substance only thus far, that by means of this decay a communication is established between the central cavity of the tooth and the external air, in consequence of which its vascular and sensitive lining becomes susceptible of pain, and subject to foreign impressions. No longer confined within unyielding walls, it now becomes capable of unusual vascular injection and tumefaction; and while especially liable to disturbing influences from without, such as pressure, change of temperature, local stimuli, &c., is also in a situation to be affected by those constitutional disturbances, whereby the balance of the capillary circulation is deranged, and determinations of blood to particular parts produced. Our object in curing toothache must, if these views are correct, be to restore the balance of the capillary circulation. The means which the author recommends to effect this purpose are threefold. First, those which locally contract the capillaries, as camphorated spirit, &c., and if the affected spot be both accessible and limited, our attempts will generally prove successful, at least for a time. Next, should be considered, if need be, the means of diverting the capillary fulness to other parts of the body—for which pur-

pose he recommends warmth, diffusible and local stimuli, purging, diaphoresis, fasting, &c. Lastly, we must seek to prevent a recurrence of the attack, by promoting the free nutrition of the capillary system, by means of a somewhat stimulant and limited diet. Thus the tone of the vessels will be restored, and a power of resistance communicated to them against the constant causes of disturbance to which they will continue exposed. Though too commonly altogether neglected, it is only by attention to this last point that we can hope to give permanent relief.—*London Medical Gazette*, June 21, 1841.

Sudden Loss of Speech from a Blow on the Cheek. By Dr Midavaine.

A soldier, 17 years of age, was brought into the military hospital at Liège, on the 31st of March 1841, with complete aphonia. The following is the history that was given to Dr Midavaine on his admission. Having gone to the citadel to do duty, he quarrelled with a soldier, who gave him a blow on the face, by which he was stunned and knocked down. Upon recovering, he fainted twice, and was each time affected with vomiting. After his last swoon, he found that he was unable to speak. No other symptom but aphonia could be detected. On the following night he was awoke by a dream, when he found that he had recovered his voice.

This case is curious from the complete isolation and persistence of a single symptom, viz. the aphonia. In the reflections which Dr Midavaine makes on the case, he asks if the loss of voice could have been owing to cerebral concussion communicated by the 8th pair to the recurrent nerve.—*Ann. de la Société de Méd. d'Anvers*, 1841; *L'Examinateur Méd.*, 24th April, 1842.

Case of Double Aneurism in the same subject, and of the Cure of one of them by Compression and the Method of Valsalva. By M. Breschet.

Adolphus Petit, 33 years of age, was affected in 1832 with aneurism in the right poples. In a month, the tumour attained the size of a hen's egg. The artery was tied in the upper third of its course, by Mr Rogers of New York; in seven weeks the tumour had disappeared, and the patient was able to resume his employment. Seven years after, an aneurism was discovered in the left poples; this, however, took five months before it reached the size of a hen's egg. On the 15th of February 1840, Mr Nancel of New York, tied the left femoral artery at the lower third of its course, but the tumour, instead of diminishing, continued to increase, and it even threatened to give way. The patient then resolved to go to France. He came under the care of M. Breschet in the Hôtel Dieu, when the leg presented the following appearance. The tumour occupied the space between the inferior third of the thigh, and the superior third of the leg; the skin covering it was of a violet colour, but without any defined margin, several large varicose veins crossing it. At one point, ulceration had taken place, from which a bloody moisture exuded. No *bruit* nor pulsation was detected in the tumour, but the femoral artery was felt to beat above the cicatrix, indicating the spot where that vessel had been tied. The pulsations of the arteries of the leg were feeble, but quite distinct. The knee at its widest part had a circumference of 55 centimetres, while that of the opposite limb at the same point only measured 46. Strong action in the precordial region and a *bruit de souffle* attested an organic state of the heart. At a consultation at which were present MM. Récamier, Blandin, Lallemand de Montpellier, Michon, Robert, Pétrequin de Lyon, and Amussat, it was recommended that M. Breschet should commence the treatment of the case by enjoining complete rest, and by keeping up

ressure over the femoral artery below the crural arch, and applying cold to he tumour. This plan was followed for three months without producing ny benefit. It was then determined to try the effect of pressure over the umour itself. The limb was surrounded by a bandage from the toes to the niddle of the thigh, the knee was covered with bladders filled with ice, the atient was bled several times at intervals gradually shorter, the quantity of liment was diminished, slight but repeated purging was employed, and he ook internally the acetate of lead and digitalis. Along with these remedies he compressor of Dupuytren was applied to the femoral artery below the rural arch, so as to stop the flow of blood to the profunda. After this reatment had been persevered in for a month and a half, the tumour was ound to have diminished five centimetres, but at this point it remained stationary. Compresses were then applied, and the limb surrounded by strips f adhesive plaster. This, in the course of five weeks, had the effect of causing diminution of five centimetres in circumference; but an attack of erysipelas aving come on, the compression had to be given up. As soon as the erysipelas had subsided, the compression was modified. Three pieces of lint, cast n the form of a wedge, were placed over the tumour, and retained by a fine andage. After the end of a month, there was again a diminution of five entimetres in the size of the limb. From this time the compression was radually lessened, and the patient was considered cured, as the left knee was ound to be only two or three centimetres larger than the right one. At the nd of three months, the leg still continued in the same satisfactory state, nd there was no appearance of the return of the aneurism.

This case is interesting, from showing the aneurismal diathesis strongly narked, and it is an example where, after ligature of the main artery of the neurism, the disease was not at all checked. It is useful, also, in teaching us to combine all the methods known to have proved efficacious in the treatment of this disease, not to restrict ourselves to one, and not to despair of success, even should our first efforts be unavailing.—*Gazette Méd. de Paris*, 4th Feb. 1842.

A New Mode of Treating Amenorrhœa. By M. Andrieux (de Brioude.)

This consists in applying a cupping-glass to the os uteri, by means of a tubulated speculum. To the inner tube is attached at its external extremity a piston; the other end embraces the neck of the womb. The instrument is made of copper, and as the inner tube cannot fit the wombs of all women, it may be unscrewed from the outer, and replaced by a larger or smaller one. The following is the summary with which M. A. concludes his paper.

1st, The speculum pump (*spéculum-pompe*) has been used sixteen times. In twelve cases, that were observed for long afterwards, the cure was permanent. In three, the catamenia appeared after the application of the instrument; but the patients were afterwards lost sight of. In the sixteenth case, only a few drops of blood appeared on the os uteri, but this patient was suspected to be labouring under tubercles of the lungs. She refused to have the instrument applied a second time.

2d, No bad result has ever followed its application.

3d, Women submit to its employment as easily as they do to that of the speculum.

4th, In the cases mentioned, menstruation has appeared during the first month.

5th, The instrument is so constructed, that no accident can follow its application, if the medical man is careful.

6th, There are cases in which this instrument may be of signal service, while there are others in which it is inapplicable.

7th, Care must always be taken that the os uteri is lodged within the tube; the operation must be done slowly, and its effects watched with the eye.

8th, It ought to be used a few days before the presumed period.

9th, Although in the majority of cases reported, the speculum pump was used alone, as M. A. was experimenting, yet it would be advantageous to combine its employment with the administration of other remedies.

10th, The theory of MM. Négrier and Gendrin on the occasional cause of the menses, does not in the least destroy the reasonableness of the employment of the speculum pump.

11th, The speculum pump has succeeded in cases where all other means in the hands of able practitioners had completely failed.

12th, The instrument as above described cannot be used in young virgins, but for them there is a peculiar modification of it.—Abridged from *Annales d'Obstétrique*, April 1842.

SURGERY.

On Inversion of the Eye-Lashes. By M. Alessi.

According to M. Alessi, there are three forms of inversion of the eye-lashes, owing to three different causes, each requiring a different mode of treatment. The *first* is produced by a relaxation of the skin of the eyelids, the effect in general of chronic ophthalmia, and yields more readily to cauterization. The *second* variety is caused by a wrong direction given to the bulbs of the eye-lashes, by superficial abscesses or pustules along the edge of the tarsal cartilage; the method to which M. Alessi gives the preference in this, is the excision of the edge of the eyelid with the ciliary bulbs. When both eyelids are affected, one must only be operated on at a time, otherwise some difficulty is experienced in preventing union during sleep, and the patient is put to considerable pain in keeping the eyelids separate. The *third* form is from contraction of the tarsal cartilage itself, and is caused by suppuration of the Meibonian glands. The following is the operation which M. A. recommends:—After having seized the edge of the eyelid, a transverse incision is made through the skin above the tarsal cartilage. The skin of the upper margin of the wound is then dissected back as far as is thought necessary, and removed by scissors. The operator then cuts the conjunctiva lining the palpebræ, in a transverse direction above the tarsal cartilage, and the wound in the integuments is united by several points of suture. The tarsal cartilage, freed from its connection with the conjunctiva, thus regains its natural direction. This operation is ingenious, and although, judging impartially, we must regard it as composed of the methods recommended by Paul d'Egine, Crampton, and Guthrie, yet M. Alessi deserves the merit of having combined them all, and thus having produced an operation undoubtedly superior to any of the others taken singly. Notwithstanding its difficulty of execution, we think it ought to be preferred in the cases of trichiasis depending on contraction of the tarsal cartilage.—Abridged from *Gazette Méd. de Paris*, 5th March 1842.

[When the eyelids retain their natural direction, and the eye-lashes only are inverted, the best practice is to excite inflammation of the bulbs, so as to destroy their reproductive powers, in the manner described by the late Dr James Hunter in this Journal, April 1841, p. 259.]

Case of Prolapsus of the Iris treated successfully by Cold Fomentations of Belladonna. By Dr Desmarres.

A young man, sixteen years of age, and of a lymphatic constitution, was seized on the 25th September 1841, with inflammation of the right eye. It was in the following state when M. Desmarres saw him. The eyelids were red and swollen, the conjunctiva and sclerotica were highly inflamed, and the cornea, besides presenting a deep ulcer, a millimetre and a half in diameter, had patches of lymph effused between its lamellæ in several places, but more particularly in the neighbourhood of the ulcer. The iris was inflamed, and the pupil contracted and immoveable. There was great photophobia. Fifteen leeches were ordered to be applied in front of the right ear, and mercurial ointment and belladonna to be rubbed over the temples and forehead. On the 26th, he took pills of calomel and belladonna, and on the 28th, the leeches were repeated. M. D. did not again see the patient till the 2d of October, when the ulceration appeared deeper. A solution of belladonna was then ordered to be dropped into the eye, and the frictions to be continued. On the night of the 4th, he was suddenly seized with severe pain in the eye, extending to the temples and forehead, which still continued on the 5th, when he made his next visit to M. Desmarres. Upon examining the eye, a large prolapsus of the iris was discovered; the anterior chamber had disappeared, the aqueous humour having made its escape through the ulceration. Vision was completely destroyed. The following lotion was prescribed, and ordered to be kept constantly cold to the eye. Of distilled water, 225 grammes; extract of belladonna, 25 grammes. He was also enjoined rest in the horizontal posture, and to remain as quiet as possible. On the 7th, the pain of the eye and forehead had completely disappeared, and the iris was found to have regained its normal situation, and its natural colour. The pupil had become round, and a fibro-albuminous matter had been deposited on the surface of the ulcer. From this time all went on favourably, and he completely recovered his vision. Some time after, the other eye became affected; an ulcer formed on the cornea, and perforation took place, allowing the aqueous humour to escape, but from the active treatment had recourse to, there was no prolapsus of the iris, it having been kept in a constant state of contraction by the application of belladonna.

The author concludes his paper, by asking, if in such a case the prolapsed iris should be attempted to be reduced by means of a soft probe, as is sometimes done in protrusion of that membrane during the operation of extraction of the lens; or should the nitrate of silver be applied with the view of promoting adhesion of the protruded portion of the edges of the ulcer, and thus prevent a farther prolapsus? To both of these methods he is decidedly averse, from the great risk of increasing instead of diminishing the inflammation. From the great success he has obtained in the above case, he is of opinion that we ought never to despair, more especially when we consider the peculiar action that belladonna has on the iris, and that cold has sometimes reduced strangulated hernia, of effecting reduction of the iris, in a recent case of prolapsus of that membrane.—Abridged from *Gazette Méd. de Paris*, 5th March 1841.

Fracture of the Thigh, caused by Muscular Contraction. By M. Naranovitch.

A cavalry soldier, confined to hospital for a scrofulous ulcer of the right knee, was sitting on the ground, before the fire, with his legs crossed, when, wishing to rise to go to bed, without supporting himself on his hands, he felt his right thigh crack, and he immediately fell back. The femur was

found fractured at the centre. M. N. says, that this case differs from most of those fractures caused by the action of the muscles, in the circumstance that there was no pre-existing disease in the broken bone. In the position in which the soldier was, the femur represents a lever of the third order, so that the muscles gain in rapidity and intensity what they lose in power from the mode of their insertion. It is remarkable, and this case confirms the truth of the observation of the author, that the generality of fractures caused by muscular force take place in the thigh. Similar cases have been recorded by Samuel Cooper, Desportes, and Rostan.—Abridged from *Journ. de Méd. et l'Histoire Naturelle*, as quoted in *Gazette Méd. de Paris*, 2d April, 1842.

Tumours developed on Cicatrices.

At the meeting of the Academy of Medicine on the 29th of March, M. Gimelle presented a soldier who had received seven blows of the yatagan on different parts of his body, and over the wounds resulting from which, tumours of a red, flattened, and pediculated character, had formed. They bore some resemblance to mushrooms. The patient had never had syphilis. M. G., not being certain of the nature and treatment of these tumours, requested the opinion and advice of members of the Society. In the course of the discussion that ensued, M. Velpeau said, that they appeared to him to present the characters of the heloide described by M. Alibert. These tumours, according to M. A., are somewhat hard, of a pale-red colour, flattened, in the form of plates, and present a homogeneous cup-like shape, all which correspond with the tumours on the soldier. Like schirrus, when excised, a portion of the sound integument must be removed with them, but even then they are apt to return. M. Gerdy remarked, that there were only two hypotheses about the nature of the disease; the one was that maintained by M. Velpeau, the other was, that they were merely fungous vegetations, which had not been kept under during the cicatrization of the wounds. He believed that they came under the latter description.

M. Patissier mentioned, that he had seen similar tumours always produced in a patient after the application of leeches. M. Rochoux had seen vegetations of a like nature on the lobes of the ears of mulattoes who wore long ear-rings. M. Blandin thought that the best mode of treatment was to excise them, cauterize their base, and then use compression; the latter was alone sometimes found sufficient. The majority of members seemed to think that they were more of the nature of fungous vegetations than of the heloide tumour.—Abridged from *Gazette Méd. de Paris*, 2d April, 1842.

Fracture of the Cranium, with Considerable Loss of the Substance of the Brain. By Dr Zartmann of Bonn.

P. W., of a strong constitution, was shooting, when the gun, which contained a double charge, burst, and a portion of the barrel penetrated the right side of the frontal bone. It was immediately withdrawn by his companions. Half an hour after the accident, he was examined by a surgeon, who found him with all his intlelectual faculties sound, and only complaining of slight headache, and stiffness of the back of the neck. Above the right orbit, and about half an inch from the frontal protuberance, was a wound, from which the white or grey matter of the brain was escaping, but little or no blood. The finger could be introduced to the depth of nine lines, and the brain, along with many splinters of bone, could be felt. The opening was round and notched, the internal membranes were detached, and the pulsations of the cerebrum were distinctly seen. The pulse was small, frequent, but regular, and the skin was cold. He was bled to ℥xxx. and was

ered to get a saline mixture, and to have cold cloths applied to his head. the next day, the cerebral substance, mixed with blood and small pieces bone, still issued from the wound. He complained of violent headache, ; otherwise was well. Was again bled. On the second day from the ac- ent, there was little discharge from the wound, but its edges were swollen l inflamed, and the symptoms of inflammation of the brain were well de- oped, as want of sleep, restlessness, headache, strong pulsation of the ca- ids and temporals, &c. To be bled to ℥x, to have twelve leeches on the und, ice on the head, a saline mixture, and sinapisms to the calves of the s. Third day, the inflammatory symptoms less marked. Continue the , and to have two grains of calomel every two hours. Fourth day, still proving. By the end of the week, the suppuration from the wound was althy, and the granulations beginning to appear. The cure was completed a month. Not the slightest alteration was visible in his intellectual fa- lties, although the brain must have lost at least three ounces of its sub- nce. —*Gazette Méd. de Paris*, Feb. 12, 1842.

On Tumours in the Bladder. By James Douglas, A.M., Glasgow.

Mr Douglas relates a very interesting series of cases of tumours in the ıdder, which he has collected from various sources. The most important int he illustrates, is the possibility of their becoming so incrusted with cal- reous deposit from the urine, as to be mistaken and operated on for stone, ufficient care be not taken in the examination. He relates one case oc- rring in the Glasgow Infirmary, where this mistake actually took place, d where an instrument was introduced to crush the supposed calculus, ıereby a portion of the tumour was detached, and was found lying loose the bladder after death, which took place from inflammation. Such cases e to be distinguished by the absence of the ringing sound, and of the firm tinct feeling of contact of the instrument against a hard body, which alone ould warrant our operating in cases of stone.—*London Medical Gazette*, b. 4, 1842.

MIDWIFERY.

On Percussion, as a means of detecting Pregnancy. By M. Andrieux (de Brioude.)

Percussion is a mode of detecting pregnancy, which has in several instances ceeded, after the toucher has failed. When the womb is to be examined, e patient must recline on her back, with her shoulders somewhat elevated, e thighs bent on the trunk, and the bladder and rectum emptied, other- ise serious errors in diagnosis are sure to occur. The plessimeter ought to ı used in preference to the fingers, as it is difficult to depress the latter suf- iently deeply to have a proper sound eliminated by percussion. We com- mence by slight palpation in the median line between the pubes and umbi- ıus. We then proceed in a lateral direction. If the womb is in the natural ate, and the bladder and rectum empty, a sonorous sound is emitted from e gaseous contents of the intestines, but if the uterus is enlarged, by pres- re with the plessimeter in the hypogastric region, a degree of dulness, cording to the size of the womb, is heard; and by the extent of this lness, the size of the enlarged uterus may be determined. To show the ility of percussion in affections of the womb, M. Andrieux cites a case of young woman, 19 years of age, who applied to him for amenorrhœa, which,

she said, she had been labouring under for three months. She denied positively that she could be pregnant, and was very indignant at the mere supposition of such being her real condition. Dulness, however, was heard in the median line, between the pubes and umbilicus. She refused to submit to the toucher. Mere palliative treatment was had recourse to; and at the end of six months, she was safely delivered of a child at the Maternité. M. A. has frequently seen, he says, cases in the hospital, where, in young women complaining of amenorrhœa, no indications of the real state of the patient were given by the toucher or auscultation, but in whom percussion showed, in the hypogastric region, a uterus more or less enlarged; in these patients, the diagnosis was afterwards fully confirmed. Besides the cases in which pregnancy is denied, percussion may be of great use in determining whether or not a woman is in that state.—Abridged from *Annales Obstétrique*, March 1842.

[To *all* practitioners certainly, percussion will not insure a correct diagnosis, at an early period of pregnancy; but knowing well the almost impossibility of ascertaining the existence of this state in the early months, we are pleased to hear of any additional means to assist in forming our opinions: though every one may not be able to arrive at the same tact in percussion possessed by M. Piorry, (who was enabled by it, in a certain case, to declare that the feet were presenting,) yet, by perseverance in the use of the plessimeter, we are satisfied, that all may very much enhance the value of their diagnosis.]

Application of the Laws of Gravity in some Diseases depending on Pregnancy. By M. Piorry.

A young woman, 25 years of age, residing in an ill-aired and crowded court, entered the Hôpital de la Pitié, under M. Piorry's care, for diarrhœa of three weeks' standing. She stated that she was pregnant of her second child, and on examination of the abdomen, the uterus was within two centimetres of the umbilicus. There was also considerable œdema of the lower extremities. The intestines were quite distended with gas. She was ordered light diet, and emollient enemata; to have the belly rubbed with flannel soaked in alcohol; and to change her position in bed, to lie on the right and left sides, and sometimes on the belly. In a short time (two days) the patient got quite well.—Abridged from *Annales d'Obstétrique*, March 1842.

[We can come to no conclusion from this case. The mere change of habitation, from a crowded and ill ventilated court where she lived, to the purer air of the hospital, was sufficient of itself to cure the bowel complaint, without supposing this to have been done by the removal of the weight of the womb from the intestines.]

A Case in which Pregnancy was unattended with the usual Signs, and in which Parturition occurred without Labour Pains—Rupture of the Funis, which remained untied forty-five minutes. By Thomas Lewis, Esq., Liverpool. [*Communicated by Dr C. J. B. Williams to the Royal Medical and Chirurgical Society of London, May* 1842.]

The case was that of a lady, aged 41, who had noticed an enlargement of abdomen for six or seven months. She felt certain she was not pregnant, because she had not experienced symptoms similar to those of her first pregnancy. Catamenia appeared last, eight or nine months ago. External examination not proving satisfactory, examination *per vaginam* was made,

hich disclosed the nature of the case. The os uteri was dilated to the size a shilling, the neck entirely expanded, and the membranes and child's ead could be felt. Though informed she was pregnant, she was sceptical, id made no preparation for the event.

On January 5th the author was sent for, and found the child born before his rrival; the funis was ruptured about four inches from the umbilicus. It ppears the lady had suffered from diarrhœa for two days previous. At one clock, A.M., she awoke, she says, with griping pains in the belly; these ntinued until six, when she got out of bed for ease. She walked into an ljoining room, and, bending herself, rested her hands on the table. Sudenly the waters broke, and the child was expelled, and fell on the floor. he states positively she had no pain in the loins, nor bearing-down pains, revious to the expulsion of the child. The author considers the following icts established by the case:—

1. That pregnancy may occur, and nearly reach its termination, without any of the ordinary signs.

2. That the arteries may contract, like other hollow muscular organs, ithout the consciousness of the mother.

3. That rupture of the funis is attended with little or no bleeding.

The practical doctrine he infers from it is, that in cases of illegitimate irths occurring suddenly, and where the child is found dead, the circumances should be of a very decided character before the guilt of infanticide s fixed on the mother.

ASE OF EXTRA-UTERINE CONCEPTION. By THOMAS WILLIAMSON, M.D. Edin., One of the Physicians to the Leith Dispensary.

The patient was a young woman, 27 years of age, who had previously orne two healthy children at the full time, the latter of whom was born bout two years previous to her last fatal impregnation. Up to within six onths of her death she had enjoyed good health. About five months preious to the fatal termination of her conception, I saw her for the first time, nd found her labouring under all the ordinary symptoms of an attack f ileus. She had been suddenly seized with acute abdominal pain, refeible to the epigastric region, accompanied with stercoraceous vomiting, obinate constipation of the bowels, and great prostration of strength. My iend, Dr Combe, at this time saw the patient with me, and, under the use f enemata and other appropriate remedies, in the course of a few days she pparently recovered. Subsequent to this, however, she experienced two or ree other attacks of a similar character to the first, although much less vere in point of intensity. These occurred within three months of my rst seeing the patient, and readily yielded to treatment. For about the pace of two months and a half, I heard no more of this case, till one day er father called upon me, and stated that his daughter had died that morng in Edinburgh, after less than half an hour's illness, and requested me to xamine the body, which I willingly agreed to do. The most satisfactory acount which I was enabled to obtain relative to her latter symptoms was from eighbours who had seen her shortly before death, and was to the effect that hilst in bed she had been suddenly seized with severe abdominal pains, and apid sinking. I ought also to mention, that the patient's mother met me ne day shortly before her daughter's death, and in answer to inquiry after ie state of the patient's health, informed me that she was now quite well, nd, judging by the last menstrual period, concluded herself seven months dvanced in pregnancy; and, moreover, that she somehow or other attributed ll the symptoms under which she laboured, when first seen by Dr Combe nd myself, to conception having at that time taken place. This latter hint, oupled with the subsequent fatal symptoms, induced me to hazard to a

friend the possibility of the case being one of extra-uterine conception, which the result of the examination fully confirmed.

Dissection.—The external abdomen was much swollen, and slightly tympanitic. Upon cutting into and reflecting the abdominal parietes, a large solid coagulum of blood, about three and a half pounds in weight, was observed completely covering the viscera, insinuating itself between their convolutions, and extending about half-way up the *omentum majus*. Upon removing the solid coagulum, a fœtus, seemingly about the sixth month, was brought into view, along with three additional pounds of fluid blood, which latter were contained in the abdominal cavity. The back of the fœtus was towards the abdominal parietes of the mother; its legs were bent upon its trunk, and the arms crossed on the chest. The anterior fontanelle was in apposition with the symphysis of the pubis, and the buttocks in a direction a little to the right of the umbilicus of the mother. Upon tracing the cord downwards, I arrived at the placenta, which was found strongly adherent to the bottom of a membranous-looking bag, quite external to the uterus. A portion of the placenta had been separated, which might perhaps in part account for this very large hemorrhage. This same sac or bag had contracted very powerful adhesion to a portion of the *intestinum ileum*. The vermiform appendix also of the cœcum had become adherent to the wall of the sac, and, by passing across a portion of the ileum in the form of a band or bridge, thus very satisfactorily accounted for the repeated attacks of ileus under which the patient during life laboured. The sac in which the placenta was contained was fairly rent across. The uterus was perfectly entire, and extremely large from pure sympathy. Its length from the middle of its fundus to the edge of the anterior lip of its os, was four and a half inches; its breadth between Fallopian tubes, was three and a half inches; its thickness, three-quarters of an inch. When laid open, it presented to all appearance a decidual lining, and its os was filled with the usual gelatinous plug. The left Fallopian tube was pervious. The corresponding ovary, when cut into, exhibited no evidence of a *corpus luteum*. The right ovary could only be felt, being completely matted or imbedded in the external general mass of adhesion, but from the feel it evidently contained the *corpus luteum*. Upon passing a probe along the right Fallopian tube, from the uterus, it made its appearance through the placenta within the sac, evidently proving that this sac or bag was neither more nor less than the right Fallopian tube, which had burst in a state of extreme distension.

Such is a brief history of the case, which, besides other interesting facts connected with it, appears to me to be very remarkable, from the lengthened period which the fœtus was permitted to remain within the Fallopian tube. It is also somewhat singular, that no trace of the ordinary membranous envelopes of the fœtus was found surrounding it, although, at the same time, careful examination enabled us to detect their remains covering the fœtal surface of the placenta.—*Edin. Med. and Surg. Journ.*, April 1842.

CASE OF EXTRA-UTERINE CONCEPTION. BY THOMAS BOSWALL WATSON, M.D.

Mrs G., aged 27, was attacked, on the afternoon of 14th December, with vomiting and pain of the abdomen, particularly in the hypogastric region. The pulse small and weak; she felt very faint, but after some time rallied considerably under the administration of stimulants. She, however, became rapidly worse in the course of the evening, and died at 9 P.M.

Examination of the body thirty-six hours after death, by Dr Paterson of Leith and myself.—The abdomen contained between two and three pounds of fluid blood, and one and a-half or two pounds of solid coagulum, on removing which the following facts were observed:—The uterine organs were observed to be somewhat larger than in the unimpregnated state; the uterus

self about double in point of size; the *os uteri* congested; the walls when it into were thick; the cavity of the uterus was lined by a membrane of a ermilion colour, and coated with a gelatiniform substance, as was also the *rvix uteri*. The right ovary, when cut into, presented numerous large ve-cles, and several small yellow points. The left ovary was about double the ze of the right, and presented a beautiful specimen of a recent *corpus luteum*, ith broad yellow striated margin and central cavity, distinctly lined by a embrane; the substance of this ovary was much more vascular than that the right. The left Fallopian tube presented a dilated portion about two ches in length, and one inch in breadth, close to its uterine extremity, of dark purple colour, and presenting superiorly a ruptured portion, from hich a small coagulum protruded. The walls of the tumour were semitran-arent at the posterior part, through which a small fœtus (about the size of a rse-bean) could be distinctly seen floating in the contained fluid. Upon itting open the tumour the membranes of the fœtus were brought into ew, partially attached to the coagulum, which protruded from the ruptur-l orifice, and was adherent by bands of chorion to the sac throughout. The es of the fœtus were distinctly visible, appearing as minute points; the ex-emities just budding. The Fallopian tube was impervious at its uterine tremity, but pervious till within about half an inch of the tumour at its rarian extremity.—*Edin. Med. and Surg. Journ.*, April 1842.

MATERIA MEDICA AND CHEMISTRY.

Euphorbia Maculata.

Dr Lolbchoffer, late lecturer on materia medica, recommends the euphor-a maculata as "an invaluable remedy in tranquillizing and controlling ose morbid conditions of the intestinal canal, which gave rise to cholera fantum, diarrhœa, and dysentery, *particularly in their secondary stages.*" In the two latter affections he uses the following prescription:—

R. Euphorb. maculat. fol. exsiccat. ℥j.
Infunde in octario aquæ bullientis.

speat cochlear. mag. omni hora, donec morbi symptomata cessantur." or a child a teaspoonful.—*New York Lancet*, No. 3, p. 27.

On a new Process for Anatomical Injections. By M. Doyere.[1]

In a letter addressed to the Academy of Sciences, Paris, July 12, 1841, M. D. ves the following account:—I have employed for nearly two years, a very mple process for obtaining fine injections. This process, which I believe kely to render some service to the anatomy of structure, and probably also pathological anatomy, essentially consists in causing to enter in the same ssels, *within a certain interval of time*, two finely filtered saline solutions, hich, by double decomposition, give an abundant and opaque precipitate. his succession of two injections, is that which distinguishes my process om many others tried without success to obtain the injection of the capil-

[1] Although the priority of discovering this process, and publishing the same, are cidedly due to M. Doyere, yet we must here state, that we have for upwards of elve months seen injections of the corpuscles and Haversian canals in bone, the bes on the fibre of some sponges, &c., similarly prepared by our esteemed corres-ndent, Mr George Busk, Surgeon to the Hospital Ship, Dreadnought. We can uch for his not being acquainted with M. Doyere's process, the account of which ars date July 12, 1841.—*Editor of Microscopic Journal.*

lary system by the same principle. I inject the second solution, as soon as the first has passed from the arterial system into the venous and lymphatic systems.

I have tried on animals a great number of insoluble salts, with a view to determine those which would give the most satisfactory results. I prefer to all others the chromate of lead. I first inject the chromate of potass, and am convinced that the order of injection is a point not to be neglected. A blue colour may be obtained by the precipitation of Prussian blue; brilliant red by iodide of mercury; white by the carbonate or sulphate of lead. The first has better succeeded with me than the carbonates and sulphates of lime and baryta.

The advantages which this process appears to me to possess over those in use, are above all to shorten the process of making fine injections, and to supersede any other preparation. It may be used with equal advantage cold or hot, in general or partial injection; the materials employed are unalterable, and may be consequently always ready. I will add, that the most minute injections required only a pressure which was evidently less than that of the heart's action. M. Poiseuille, to whom I made the process known several months since, in order that he might make use of it in his particular researches, has constructed an instrument by the assistance of which he can inject either liquid with that degree of pressure he considers proper.

By the assistance of this process, I have more than once succeeded injecting by the femoral artery in a single operation, and in a few minutes, the capillaries of the muscular system in an entire animal, the adipose and cellular systems of the white and grey matter of the brain, of the conjunctiva, of all mucous membranes, intestinal villosities, &c. The capillaries thus injected by the chromate of lead are more filled, especially after drying, than by the injections of size, but less than by those of varnish (*vernis*); there also remains some doubt in my mind relative to the actual diameter of the latter canals. Those which run parallel to each primitive muscular fasciculus, to the number of four or six, appeared to me to possess, in the dog, 1-400th or 1-300th of a millimetre; but it is possible that their dimensions had been reduced by the action of one or the other of the two solutions employed, or that they had not been sufficiently filled. I am now engaged in determining the relation which exists between the size of injected vessels, and their size during life.—*Comptes Rendus*, July 1841; and *Microscopic Journal*, Dec. 1841.

Chloride of Tin for the Preservation of Pathological Preparations.

Mr Lewis Feuchtwanger recommends a solution of the chloride of tin for the preservation of pathological and anatomical preparations of all descriptions, in preference to alcohol, or any other liquid used for the purpose. It does not harden, contract, or discolour the substances immersed in it, and can be obtained at half the expense of alcohol. "The easiest mode of obtaining the chloride of tin is the following:—Take one ounce of granulated tin—digest in three ounces of muriatic acid for an hour; then add one and a half ounces of nitric acid, and allow the mixture to stand for 24 hours. The solution is to be made as follows:

Chloride of tin	1 oz.
Creasote	¼ —
Alcohol	2 —
Water	20 —

One gallon of this solution can be manufactured for half a dollar."—*New York Lancet*, No. 2, p. 28.

Counter-Irritants prescribed by Dr Turnbull.

We have received the following formulæ from Dr Turnbull, with permis-
n to publish them.

Tinctura Capsici Concentrati.

R. Capsici Baccarum, ℥iv.
Spiritus Vini Rect. ℥xij.

Macera per dies septem, et cola. (It may also be made with advantage by
olacement).

This concentrated tincture is used as an external application, and is found
be a powerful rubefacient and counter-irritant, for which purpose the or-
ary tincture of capsicum is not sufficiently potent.

Veratria, dissolved in this tincture, acquires increased activity; the capsi-
n apparently facilitating its absorption into the skin. Four grains of
atria, dissolved in an ounce of the concentrated tincture of capsicum, will
found as powerful in its effect as twelve or fifteen grains dissolved in al-
ol.

Pulvis Aluminis et Capsici.

R. Aluminis Sulphatis, partes tres.
Tinct. Capsici concentrati, partem unam.

Misce et sicca.

A very small quantity of this powder, applied to the tonsils, is found more
acious, in some cases, than an alum and capsicum gargle.

Unguentum Ipecacuanhæ.

R. Pulvis Ipecacuanhæ, ℥ij.
Olei Olivæ, ℥ij.
Adipis, ℥ss. M. ft. unguentum.

Unguentum Emetina.

R. Emetinæ, g. xv.
Sp. Vini. Rect. q. s.
Adipis, ℥ss. M. ft. unguentum.

Dr Turnbull states, that he has found this ointment particularly efficacious
a rubefacient in pulmonary and rheumatic affections, producing little or
pain or inconvenience to the patient.—*Pharmaceutical Journal*, May 1842.

Citrate of Iron.

The citrate of iron appears to have been first introduced to the notice of
the medical profession by M. Béral of Paris. The process, given by him for
the preparation of this salt, was published in 1831, and is as follows :—

Take of Crystallized citric acid, four ounces.
Distilled water, four ounces.
Moist hydrated peroxide of iron, about eight ounces.

Weigh the acid and water in a platinum capsule, and apply heat; when
the acid is dissolved, and the solution boiling, saturate it with the oxide of
iron, adding rather more of the oxide than the acid will dissolve. When
cold, filter the solution, and make the quantity sixteen ounces. This solu-
tion, spread out on glass, will speedily dry, and separate itself from the glass
in lamellæ.

The hydrated peroxide of iron may be prepared either from the sulphate
from the sesquioxide of iron. A formula for its preparation from the sul-
phate is given in the Edinburgh Pharmacopœia. It is prepared from the
sesquioxide by dissolving this oxide in hydrochloric acid, and precipitating
by ammonia.

The oxide of iron and citric acid combine in the proportions of forty parts
of oxide to seventy of the crystallized acid. In using the moist hydra-

ted oxide, as the degree of moisture will be subject to variation, the oxide should be added in excess.

The salt, thus formed, is uncrystallizable; it strongly reddens litmus paper, and has an acid, not unpleasant, taste. It is very slowly soluble in cold water; so much so, indeed, as to have led to the supposition of its being insoluble. It dissolves readily in boiling water.—*Ibid.*

Ammonio-Citrate of Iron.

If to the acid citrate of iron in solution, prepared according to the foregoing process, ammonia be added so as to neutralize the excess of acid, a double salt is obtained, which dissolves in cold water much more readily than the citrate, and which, from its neutrality, may in some cases be preferable to the other.

This neutral salt is frequently sold under the name of *citrate of iron*, and having been extensively introduced to the notice of medical men, under this appellation, without its real constitution being explained, it is the salt generally referred to, where *citrate of iron* is ordered in prescriptions. Much inconvenience frequently arises from this circumstance, the dispenser being at a loss to know whether he should use the salt which the term *citrate of iron* most correctly represents, namely, the *acid citrate*, or that which is more frequently intended by the prescriber, namely, the *ammonio-citrate;* the latter being imperfectly and improperly described by the term *citrate of iron*. It is very desirable that such a nomenclature should be adopted, in the case of these two salts, as would obviate this confusion; and it is hoped that the publication of the formulæ for both preparations, may tend to effect this object.—*Ibid.*

Lactate of Iron.

The preparation of this salt is effected, according to M. Louradour, by the direct action of a dilute solution of lactic acid on iron filings.

The lactic acid is obtained by the spontaneous fermentation of milk. To eight pints of milk add eight ounces of sugar of milk dissolved in water; leave this mixture, in an open vessel, exposed to the air for several days at a temperature of between 70° and 80°. The liquid being now found very acid, is to be neutralized with bicarbonate of soda; on further exposure this will become again acid, and must be neutralized by the addition of more of the alkali, and the same process repeated until the whole of the sugar of milk has been converted into lactic acid. The liquid is now to be boiled to coagulate the caseum, and the filtered solution carefully evaporated to a syrupy consistence. The product of the evaporation is taken up by alcohol, which dissolves the lactate of soda. Sulphuric acid, added in proper quantity to the alcoholic solution, forms sulphate of soda, which is precipitated, while the lactic acid is retained in solution, nearly pure. It may now be obtained by evaporation of the alcohol.

In a weak solution of this acid in water, iron filings are to be digested at a gentle heat for six or seven hours; after this, boil the liquor, filter, and concentrate the solution, until crystals of the salt are afforded on cooling. These crystals are to be put into a funnel, washed with alcohol by displacement, and dried quickly.

This salt, which is a lactate of the protoxide of iron, is generally met with in the form of a yellowish or greenish white powder. It is but little soluble in water; it reddens litmus paper, and has a ferruginous taste. When dissolved in water, the iron passes to a higher state of oxidation, and the salt becomes yellow.—*Ibid.*

FORENSIC MEDICINE.

Case of Accidental Poisoning by Arseniuretted Hydrogen. By Dr O'Reilly.

Only two examples are recorded of poisoning by this gas, viz., Gehlen, the celebrated German chemist, and Mr Beard, a British lecturer on chemistry. The subject of the following case was Mr Brittan, a druggist and chemist, aged 31, who, at two different periods, had inhaled about 150 cubic inches of impure hydrogen gas, believing that, if it was pure, it would have no injurious effect on the health, and that the only symptom that would follow would be a shrillness of the voice. He was to have made his experiments known in a book that he was writing on Chemical Manipulation. After he had inhaled the last quantity of gas, (on the 23d October 1841,) he was seized with giddiness and fainting, followed by shivering, during which he had evacuation from the bowels, and a discharge of about two ounces of blood from the urethra, without pain. This was followed by numbness of the extremities and vomiting. To allay the irritability of the stomach, a draught of opium and ammonia was ordered. On the following day, his whole body was jaundiced, and he had slight tenderness at the epigastrium, for which eight leeches were ordered, and four drops of the black drop, with three grains of mercury and chalk, were directed to be given every second hour. Up to the 26th the vomiting was very urgent, but on that day the stomach retained what was ordered; the jaundice also began to disappear. He passed no urine till the 29th, the day of his death, when a small quantity was voided; it deposited a little blood. He never complained of any severe pain either in the stomach or bowels. On the day after the inhalation of the gas, he became somnolent, which state continued more or less till he expired. When Dr O. saw him, his voice was whispering, which alteration, his assistant stated, took place while inhaling the gas. On the 27th, an ammoniacal odour was perceptible in the breath. He gradually became exhausted, and sank, as already mentioned, on the 29th. The following is the account of the post-mortem examination, 36 hours after death. "Universal anasarca; integuments of the abdomen of a slight greenish colour, particularly at the sides; abdomen greatly distended with gas; on opening the chest, we found the lungs completely collapsed, natural in structure, but containing little air; a fluid, to the amount of two pints, of a reddish-brown colour, without odour, was effused into the chest; heart pale and flabby, not containing blood, nor changed in structure; a little fluid in the pericardium.

"*Abdomen.*—Liver of a deep indigo colour, not increased in size; the gall bladder distended with bile; the kidneys of a deep indigo colour all through; the left particularly large; the internal structure resembling much the spleen in appearance, the right smaller and firmer; the stomach empty; two distinct patches of inflammation were observable in the greater curvature; the mucous membrane easily separated; the bladder empty and natural.

"*Head.*—The dura mater healthy; arachnoid somewhat vascular, containing air bubbles underneath; the substance of the brain presented bloodless dots; no fluid in the ventricles.

"In this case we have many points for consideration. *First*, What were the impurities which the hydrogen contained? For the elucidation of this question, I obtained the bottle from which the sulphuric acid was procured, and also a portion of the zinc employed by the deceased in the generation of the gas; and having obtained a double-necked bottle, with two tubes, one a bent one, for the transit of the gas, and the other a safety tube, which dipped

into the fluid; and having added water to the acid, in the requisite proportions, I passed the mixture into the bottle, having first introduced the zinc, when immediately hydrogen was evolved, from which I obtained a large portion of arsenious acid and metallic stains. I then heated the tube to redness, and in the cool portion of it, a large quantity of the metal was deposited, forming the well-known metallic crust, and crystalline appearance. The arsenious acid was then subjected to the fluid reagents," when the characteristic colours were developed. "The second question for consideration was, In which of the ingredients was the arsenic to be found, or was it in both? In order to ascertain this fact, I sought for some pure sulphuric acid; and after subjecting six different specimens from different respectable establishments in this city, both of the pure and impure, I found *all* to contain arsenic in large quantities.[1] However, through the kindness of Professor Kane, I was enabled to obtain a pure acid,[2] from which I could not obain a trace of the metal, although using the ordinary zinc of commerce, as well as a portion of that which I had obtained from the deceased's establishment, and a part of which he had used. So far, then, it is quite evident that the sulphuric acid was the immediate source from which the arsenic was eliminated; and I would wish to caution the public, generally, from employing such acid for medicinal purposes, and also those exposed to the fumes of the acid during its concentration, or using it extensively in the arts, lest injurious consequences may result. According to Orfila, Vagel, Vakensodder, and Barthel, all the sulphuric acid prepared in leaden chambers contains arsenic in considerable quantity. I have found that the fuming acid of Germany is free from arsenic, at least as far as my experience enables me to form a judgment. Having used iron tinnings in place of zinc, the arsenious acid was produced in a similar apparatus, from the British acid, but none from the German. *Third*, The fluid found in the chest, amounting to 22 fluid ounces, of a reddish-brown colour, feebly alkaline, sp. gr. 130, was filtered. Ten ounces of this were then evaporated in a sand bath to the consistence of a jelly; when weighed, it amounted to four ounces; to this two ounces of German sulphuric acid were added, and exposed to heat in a sand bath, when it became carbonized. In this state I dissolved it in distilled water and filtered; after which I placed it in the same apparatus wth zinc and pure sulphuric acid. The gas given off was found to contain arsenic from the stain produced, and also the garlic odour emitted at the extremity of the tube. This experiment I consider highly valuable, as it is a confirmation of Orfila's statement, that arsenic may be obtained from the bodies of persons poisoned by this substance, no matter in what way introduced into the system, although a trace of such may not be found in the contents of the stomach, or intestinal tube. In this instance, although inhaled in the form of arseniuretted hydrogen, and though the quantity of arsenic received into the system was exceedingly small, merely sufficient to destroy life, still sufficient evidence was afforded of its existence."

From experiments performed by Dr O'Reilly, he was of opinion that the quantity of arsenic inhaled by Mr Brittan must have been about 12 grains. "As to the pathological appearances, they, in some degree, differed from those usually stated by authors as occurring in the various forms of arsenical poisoning; particularly the indigo colour which pervaded the entire structure of the liver, and also the state of the kidneys; but the alimentary canal agreed in appearance with the cases already mentioned. The brain, heart, and lungs, may be considered, also, not to have presented unusual appearances under such circumstances."—Abridged from *Dublin Journ.* for Jan. 1842.

[1] All our sulphuric acid is now formed from the sulphur obtained from iron pyrites and in leaden chambers.

[2] This was the German acid, prepared from sulphate of iron.

Case of Poisoning with a Minim and a Half of Laudanum. By M. Everest.

The author delivered a poor woman of a fine female child, and before leaving her, prescribed a draught, containing twelve minims of tincture of opium, in an ounce of pimento water, with a view of relieving the after-pains; this was on Monday, and on the Wednesday following, the nurse gave the child half a teaspoonful of the draught, in order to compose it and keep it from crying. The author found it in a state of profound coma, and notwithstanding all the means put in requisition, the infant died fourteen hours from the taking of the dose. Dr Christison has reported a case of a like fatal result, in consequence of a child, three days old, having had the fourth part of a mixture containing ten drops of laudanum,—a quantity greater than that of the present case. The author justly infers, from his case, the great caution requisite in administering opium to infants.—Mr Everest, *Lancet*, No. xxii., Feb. 26, 1842; and *Brit. and For. Med. Rev.*, April 1842.

Case of Recovery after a large quantity of Laudanum had been taken. By J. Toogood, Esq.

The wife of a sea-faring man who wished to commit suicide, swallowed, at five in the afternoon, ten drachms of laudanum. It was not discovered till past eleven at night, when she was found in a state of complete stupor, with slow and stertorous breathing, hands and feet quite cold, and a feeble irregular pulse. The stomach pump was immediately applied, and a quantity of liquid, smelling strongly of laudanum, removed. The bowels were freely opened by enemata, and vomiting kept up by the sulphate of copper. Notwithstanding these means, the insensibility increased, and she was dragged about the room more like a corpse than a living woman. The pupils were widely dilated. Upon dashing cold water on her face, or giving her a slap on the back, she could be momentarily awoke. She was pulled about the room for 17 hours before she was sufficiently roused to ensure her recovery. She did not get the better of the effects of the laudanum for a week. Mr Toogood then relates two cases of a fatal result from taking a very small dose of opium. The one was a feeble woman, 55 years of age, who took twelve drops Battley's sedative solution at bed-time, and who never awoke again. The other was an old lady of 80, who had been in the habit of taking small doses of syrup of poppies at night for a troublesome cough. Having run short of her supply, she was given seven drops of the solution of the acetate of morphia; she fell into a deep sleep, and died next morning.—*Prov. Med. and Surg. Journ.*, 13th Nov. 1841.

Poisoning with Colchicum Autumnale. By Dr Scilling.

A boy six years old, who, on the 27th June 1836, had eaten of the seeds and leaves of this plant, was attacked the same night with convulsions, which soon assumed the appearance of opisthotonus. He slept for some time, but soon another similar attack ensued, and after this had ceased, spontaneous vomiting set in. Tartrate of antimony, ipecacuanha, and copper were administered. The patient lay on his back and rolled about his head; he passed his urine involuntarily, and his pulse became thready and tremulous. On the 28th and 29th he seemed somewhat recovered. 30th, The sclerotica of the left eye slightly reddened, and a small white macula in cornea.

July 1. Within a few hours a perfect capsular cataract had formed.

July 2. The quantity of lymph in the bottom of the anterior chamber

had diminished; the respiration was accelerated. 3*d*, The cornea has again become clear, and the maculæ have entirely disappeared. Elbow and knee joint of the left side swollen, hot, and painful; hemiplegia of the right side; perfect loss of hearing, grinding of teeth, and *gastricismus*. 4*th*, The right side perfectly paralytic; abatement of the other symptoms; the cornea is again transparent, but the opacity of the lens is more extensive. 5*th*, Convulsion of the whole of the left side; pulse 180. 6*th*, The patient eat something for the first time. Continual diuresis. The left eye is smaller. The posterior chamber has again become somewhat clear, but a yellow fleecy membrane protrudes through the pupil, which is of natural size, and contracts sluggishly. The patient refuses every thing. 7*th*, The sclerotic of the left eye is again redder; the fleecy membrane round the edge of the pupil has pushed itself into the anterior chamber, and there adheres immoveably. In the posterior chamber the opacity of the lens is still visible, but smaller than formerly. The iris is dull; the pupil extremely sensitive. 18*th*, The eye is again normal; every quarter of an hour a quantity of urine is passed; pulse 180–185, smaller and harder. This state continued with little change until the 20*th*. At this period the opaque lens appeared to withdraw deeper into the posterior chamber; and, on the 23*d*, the eye appeared perfectly well. 24*th*, Convulsions and loss of feeling on left side. The sclerotic of the left eye appeared again more reddened, and in the bottom of the posterior chamber a slight opacity, which seemed to affect the crystalline lens; the pulse thready; the breathing had been for some days intermittent. On the night of the 8*th of August* the convulsions disappeared; a spot was visible on the cornea; the pulse almost imperceptible. 13*th*, The opacity of the cornea disappeared, and a greenish opacity was observable in the posterior chamber. 14*th*, Violent convulsions, in which, however, the paralytic side did not partake. At three in the morning the patient died. The dissection was not allowed. The diabetes, in this case, which began within 24 hours after taking the poison, and only ceased at death, is well worthy of observation.—*Medizin. Annalen*, 6 *Bd.* 4 *Heft.* s. 591.

HYGIENE.

Health of the Labouring Population of Kelso, in two Decennial Periods. By Dr Charles Wilson.

This is a valuable paper, which we are induced to notice, in order to furnish practitioners throughout the country with an opportunity of comparing the facts of the author's paper, with those of a like kind which may exist elsewhere. The total number of cases entered for the first decennial period, extending from 1777 to 1787, is 4705; for the second decennium, extending from 1829 to 1839, 8034; making in all 12,739. The total number of deaths is 423.

In a table designed to show the mean relative prevalence of various epidemic and endemic diseases, such as ague fever, small-pox, chicken-pox, scarlet fever, measles, hooping-cough, and erysipelas, and their proportion per cent. to all other diseases, we find that the total amount of these diseases was in the first decennium, 33·07; in the second, 15·35. Cases of ague appear to bear an extraordinary proportion, in the first decennium, presenting an average of nearly one-seventh of all cases coming under treatment; nay, in some of the separate years, their proportion rises even as high as a fifth; while, in the second decennium, the average proportion of cases of ague is only 1.600th of the general mass of disease. The author accounts for this immense difference by improvements on the land, as drainage, cultivation, and by the su-

perior construction of houses. In the first period, fever has a proportion of 12·71, and a mortality of 0·68; in the second, the proportion is 7·36, and the mortality 0·34. Smallpox is greatly less in the second period. Of the remaining epidemical diseases, in all, with the exception of erysipelas, the proportion is higher in the second than in the first period.

From a table showing the proportion per cent. of diseases of the nervous apparatus to all others, we find that the amount of relative prevalence in the first decennium was nearly double that of the second. Yet, on further calculation, it appears that the relative mortality exceeded that of the first in the proportion of 20 to 15.

From a table showing the proportion per cent. of diseases of the respiratory apparatus to all others, we find that maladies of this sort constituted, at an average, during the first decennium, nearly a tenth of the whole cases brought under treatment; and that, in the second decennium, their prevalence was slightly increased. Of 4·60, the average mortality per cent. during the first period, 1·09 or nearly a fourth was owing to this class of ailments; while, in the second period, they produced fatal results in only 0·67 per cent.; thus still retaining, however, nearly the proportion of one-fourth the average mortality per cent. from all diseases of the latter period.

From a table showing the proportion per cent. of disease of the circulatory apparatus to all other diseases, we find that the prevalence of the former has been five times greater in the second period than in the first, yet still amounting to a very insignificant proportion. The mortality in the second period is 0·09 per cent. of all diseases treated. In the first, no affection of this class has been assigned as a cause of death.

From a table showing the proportion per cent. of diseases of the digestive organs to all other diseases, we learn that this class of diseases has been nearly twice as prevalent in the second period as in the first; the mean proportion in the first having been 28·34; and in the second 15·77 per cent. upon all kinds of diseases taken collectively. The difference of mortality in the two decennia, from diseases of this class, is most remarkable. In the earlier one, of 100 cases of diseases of the digestive organs, 6·73 ended fatally; in the second only 1·44 proved mortal.

Regarding the seasons of the year, in which the greatest mortality prevailed, the record enables the author to offer little information in regard to the first period, and none whatever in regard to the second. Of 100 deaths recorded in the first six years of the first decennium, 26·72 occurred in spring, 30·18 in summer, 12·24 in autumn, and 25·86 in winter.—*Quarterly Journal of Agriculture*, No. lv. Dec. 1841; and *Brit. and For. Med. Review* April 1842.

STATISTICS.

Statistics illustrative of the Etiology of Phthisis. By Dr Briquet of Paris.

The cases, 109 in number, reported by Dr Briquet, were treated in the wards of the *Hôpital Cochin* of Paris: though few, the analysis given of them by Dr B., is not without interest and importance.

1. At the *Hôpital Cochin*, during the last three years, there was a tenth more of male than of female phthisical patients;—a result the opposite of that arrived at by Lombard and Louis.

2. In at least a third of the cases, the disease was directly hereditary.

3. The only external appearances which characterized the phthisical patients were a tall thin figure, an ill-formed chest, and nails convex from

the base to the summit. The tint of the skin, and the colour of the teeth, presented nothing peculiar.

4. The patients very rarely had the superior circumference of the thorax less than the inferior circumference; which is diametrically the reverse of the assertion of Hirtz on this subject.

5. In those trades in which a deficient quantity of fine air is necessarily inhaled, the number of phthisical cases was greatest, and *vice versa*.

6. A third of the phthisical patients had a susceptibility to catarrh, and were more sensible of cold than others.

7. The disease showed itself in three-fifths of the patients between the ages of 20 and 30. In the children of phthisical parents, it appeared in two-thirds of the cases before 30; but in the offspring of healthy parents, in one-half of the cases, not till after that age.

8. In four-fifths of the patients, there existed a predisposition to phthisis, in one-fifth it was only organic; in three-fifths it was acute, and in some of these cases it was also congenital; in one-fifth there was no predisposition.

9. Four-tenths of the patients had not been subjected to any appreciable accidental cause; but of these individuals, the majority was predisposed to the disease. Five-tenths had been subjected to some decided adverse influence, and in almost all of these cases this was exposure to cold and damp combined.—Abridged from *Reveu Médicale*, 1842.

REPORT OF THE LUNATIC HOSPITAL AT PRAGUE, FROM 1835 TO 1841. BY DR RIEDEL.

The number of patients admitted into the hospital was 751, of whom 330 appeared curable, and 421 incurable. Of the 721, 261 were completely cured; in 95, amelioration of the symptoms took place; 182 died, and 231 remained in hospital. As a cure could only be expected in 330, the cures were in the proportion of 100 : 78. It is evident, says the author, that patients who were admitted as incurable, were discharged cured; while others again who were thought curable on their admission, still remain in the asylum. Of the 751 patients, 425 were men, and 326 women; of these 335 were married, and 416 unmarried. According to Dr Riedel there is always in Bohemia a greater proportion of males insane, which he attributed to the women being less engaged than the men, in political, literary, and social affairs, and not addicted to that refined luxury which obtains in Paris, Lyons, &c. &c. However, within the last six years, "the spirit of the age" has more and more manifested itself in Bohemia; and, accordingly, the relative proportion of insane is gradually becoming more equal in the sexes.

Age of Lunatics.

From 1	to 10 years there were	6 insane.
11	— 20	75
21	— 30	230
31	— 40	193
41	— 50	144
51	— 60	73
61	— 70	25
71	— 80	5
		751

From this table, it appears, that the age at which insanity is most prevalent, is from 20 to 30, while, from the other tables, it appears to be most common from 30 to 40.—Abridged from *Gazette Méd. de Paris*, 12th Feb. 1842.

ANNUAL REPORT OF THE 15TH REGIMENT, N.I., FROM 1ST JANUARY TO 31ST DECEMBER 1839. BY A. GRAHAM, Esq., Surgeon 15th Regiment, N.I.

Stationed at Malligaum. Strength 1005.

	On the 1st Jan. 1839.	On the 31st Dec. 1839.
Included in the return,	752	510
Absent on command beyond the division on leave,	226	495
Total,	978	1005

Number of Sick.

Remained 31st December 1838,	31
Admitted in 1839,	1111
Discharged,	1079
Died in hospital,	21
Remaining 31st December 1839,	42
Average daily number of sick for the year,	33$\frac{1}{3}\frac{1}{6}$
Average number of convalescents,	4$\frac{1}{2}$
Died without receiving medical treatment,	1

Changes since 31st December 1838.

Recruits joined,	146
Discharged from the service on account of other causes	7
Invalided,	0
Pensioned,	1

General Observations.—During the last twelve months, the greatest number of admissions into hospital have been for fever. The regiment left Bombay in the end of December, and reached Malligaum, 14th January 1839, having marched through a country with very little jungle, at least above the Ghauts. On arriving in the cold climate of the Deccan, from the warm and humid atmosphere of the Concan, several cases of bronchitis, pleuritis, and dysentery occurred. During the present cold season, the two former complaints have been of rare occurrence, and this circumstance may be owing to the men becoming more inured to the Deccan climate, and to their sleeping in warm huts, and not being so much exposed to the cold at night, and heat of the day.

On the subject of fever, although much has already been written, a few observations, owing to the peculiar locality of Malligaum, may be permitted. To the north and west of this station immense tracts of jungle exist, the fertile source of fever. Illustrative of the effects of these jungle fevers in destroying human life, a few examples may be given.

In November last, a party of the 15th regiment, N.I., consisting of a naique and six sepoys, were ordered to escort horses through the unhealthy and jungly country lying between Dywell and Soneghur to Surat. This country is bounded on the south by the Daung, and north by the Taptee river. The jungle consists principally of large mowa trees, and is not at all thick in the immediate vicinity of the road.[1] The party of sepoys not having sufficient clothing, suffered from the cold at night. To allay the thirst

[1] About the banks of the Taptee there is an extensive teak jungle which unites with the Rajpeepla, commonly called the Barria jungle; the country between the bottom of the Dhywell Ghaut and Soneghur, is gently undulating, well watered by numerous streams, taking their rise in the Daung, and running northwards to the Taptee. It is distinguished by the old travellers (Tavernier and Bernier) as producing the finest rice in India. At present the chief food of the people is coultee. Hemp is grown to a great extent, and steeped in every running stream.

caused by the fatigue of the march, they drank freely of any kind of water that fell in their way. At different times they were all seized with fever.[1] Five of the number reached camp; three of them, after much suffering, have recovered, the two remaining, it is to be feared, will never overcome the sequelæ superinduced by the fever. One poor man became deranged, and, wandering about the jungle, soon died. "Colonel Briggs states, that in the same forest, in the year 1819, a detachment of fifty sepoys and an European officer passed to Surat in September, and returned in October. The whole of the sepoys were affected with fever, and the officer died. In the following year sixty men performed the same duty at the same season, nearly all of whom died. The officer escaped, after a lingering illness, with his life. At the same time, also, a detachment of H.M. 67th foot, consisting of five officers and twenty-two privates, marched from Surat to Kandeish, of whom one officer and a private only survived; the whole of the rest died within a fortnight of their arrival at head quarters of the regiment. All the Europeans who have passed by this route within the last nine years, in the unhealthy months, have invariably died. The disease which affects them is a violent bilious remittent fever, which usually carries off the patient in a few days, in spite of the earliest and most skilful medical aid." With all these melancholy facts on record, and so faithfully reported by Colonel Briggs to government, it is much to be lamented that the naique and five sepoys of the 15th regiment should have been ordered, at the unhealthy season of the year, to traverse this fatal jungle merely to escort horses from Poonah, which could, with great ease and much less expense, have been embarked from Bombay. The detachment of sepoys sent from the troops of this station to Dhywell on the edge of the Daung country, and Kookurmoonda on the Taptee river, always suffered severely, and the non-effective list has been much increased by the men who have had enlarged spleens, &c., in consequence of fevers contracted at these unhealthy outposts.

In 1830, 400 native troops marched from Malligaum, and were between two or three months, during the hot weather, in the Daung or hilly country. Only 120 marched in camp—out of five European officers one died—three went away sick, one to England, and two to the Neilgherries. At the same time many horses got hot and cold fits of fever,—about ten out of 100 died. Captain Douglas Graham, who was one of the officers, has given the above statement. The natives of Pimpulneer, and along the top of the range of the Daung, are, in October and November, all subject to fever, and, in consequence, many of them have enlarged spleens and wasted extremities. They use decoctions of aromatic vegetables, &c. in intermittent fevers, and many of them seem to recover without using any remedies.

The assistant collector mentions that on one occasion the villagers sent in all the muskets of the Kookurmoonda detachment, the whole of the party having perished in consequence of fever. To enumerate the many fatal and lamentable cases that have occurred of officers and individuals who have likewise perished in these jungles, would be tedious; yet, strange to say, the public do not learn experience from the past. There is an indifference about ascertaining the proper months for passing the jungles, and to investigate the causes of so much mortality, and the circumstances under which it has happened. In that tract of jungle lying to the north betwixt Malwa and Kandeish, the examples of mortality from fever are numerous. Colonel Briggs states that, in the year 1818, a regiment of native infantry, 600 strong, and 24 European artillerymen, formed the garrison of Sindwa, and a body of 50 cavalry and 200 irregular infantry were posted to protect the pass. In August the whole were in excellent health; in October one-third of the regiment, and nearly all the artillerymen, were dead of fever; the irregulars deserted their post after having lost the greater part of their

[1] With the exception of the naique.

number; and when the regiment was relieved, early in November, it moved a complete hospital, there was not one man for duty. The doctor and all his native assistants were dead, and but two of the European officers escaped death. Since that period till December 1827, a period of nine years, I only knew of two officers, who passed through those hills in the unhealthy months, who did not die, and both those persons were saturated with calomel, and probably resisted the infection on that account."

In January of the present year, 600 recruits for general service traversed the last jungle alluded to by Colonel Briggs, betwixt Malwa and Kandeish. Several officers had passed through the same tract at the same time with impunity. These recruits slept on the ground, and, after marching during the heat of the day, were exposed to the intense cold of the night. Several of them, however, had warm quilted cotton jackets, and thus escaped fever, or had it only slightly. On their arrival at this station, nearly 60 were admitted into hospital; some of these poor men had suffered for several days, and were beyond the reach of medical aid when they arrived—only seven of the number died.

The complication was chiefly bronchial, of a very intense character. The bronchial membrane was swollen, and the air cells were filled with secretion; the blood was thus deprived of its due proportion of oxygen, and the effects of unoxyginated blood were apparent upon the brain. One poor man died delirious on the day of his arrival, without our being able to give him any medicine. In the worst cases, scarcely any pulsation at the wrist could be discovered; the surface was cold, dry, and rough,—the function of respiration was much impeded,—the whole of the muscles attached to the thorax being called into action to expand the chest without the power to effect it, and yet there was no local pain. In the progress of the disease, the air cells were ruptured, and their connecting tissues; and thence the air, without rupturing the bronchial lining, escaped by the root of the lungs to the cellular membrane of the thorax, forming emphysema of the neck, face, and around the clavicles. Hemorrhages of a dark corrupted blood occasionally took place from the nose and throat. In one or two cases deafness occurred. Where disease of the cerebrum was superinduced, the tongue was rough, dry, and broken into furrows; when the abdominal complication prevailed, it was smooth, dry, and glossy.

The form of jungle fever in October and November seems to be bilious, intermittent, and remittent, owing, no doubt, to the great congestions which take place in the splenic and portal circulation; again, as the cold season advances and becomes more intense, the jungle fever assumes the character of gastro-enteritis, and bronchitis, and eventually, as the cerebrum becomes affected, a typhoid fever is superinduced.

In these jungles, in October and November, the exhalation from decaying vegetation is very extensive—putrid matter fills the waters. On the tanks, wells, and nearly stagnant rivers, a dark substance like floating oil abounds. It has also been stated that a poisonous vegetable exists on the banks of some of the streams, and, after the rains, impregnates the rivers with its noxious qualities. In all the waters of Kandeish, the natives are known to steep hemp after the rainy season; putrefaction and animalculæ must therefore abound in this essential necessary of life, no doubt proving a great cause of disease. Animalculæ alone are said, by Dr Copeland, when received into the circulation, to cause fever. Majendie and Dr Gaspard state, that both putrescent animal and vegetable matters, when injected into the blood-vessels of the inferior animals, occasion phenomena strikingly analogous to those exhibited on the human subject labouring under malignant fever. These putrid substances introduced under the skin, as well as into the blood, have been known to produce symptoms similar to those of typhus and yellow fever; and, after death, the blood is remarkably altered,—it is nearly altogether fluid, and is of a very dark colour, and exudes from the mucous sur-

faces. The following official letter from the deputy-post-master of Hoosingabad to the secretaries of customs and post office committee, dated 17th May 1837, is copied, to point out the bad effects of corrupted water on the human constitution:—"For the benefit of the police, chookees, and travellers, I had wells made at all the stages to Baitool, which precaution has quite put a stop to jungle fever, which used to be contracted by the Najeems, Dawkmen, travellers, and people who resided there."

Malaria and marsh miasmata, &c. are acknowledged by the medical profession to be the grand source of fever, after the rainy season, owing to the putrefaction from vast forests of decaying leaves, from jungle grass of the rankest description, and partly commingled with animal effluvia. It can easily be imagined that from so many adventitious substances, and previous to the sap again rising in the trees, the most deleterious gaseous bodies may be generated, destructive to human life, and producing fevers of the most fatal character. It would almost seem that these are of the more ponderable gaseous bodies, for it has been observed, that in some situations, officers who have slept on a cot a little elevated have escaped, while the servants, who slept on the ground, have been seized; yet, notwithstanding these circumstances, this is a subject of much perplexity. It is generally acknowledged, that the jungle fever does not show itself for fourteen days after the person has been exposed to the malaria. In this respect, it is unlike the action of these gaseous bodies in other situations. The real existence of these deleterious matters has not yet been demonstrated, but has merely been deduced from certain phenomena, called fever, produced in some localities. The gaseous bodies are well known to be equally diffused in all situations. On the highest hills, as well as in the deepest valleys, the proportions of the different gases, or airs, forming the atmosphere, are found to be invariably the same. Dr Mather Smith supposes, therefore, that these ponderable gases cannot of themselves have any direct agency in producing fever; but as the proportions of electricity are variable at all times, and as this element, in due quantity, may be as essential to health as any of the others, the variations, in its proportions may render the atmosphere highly insalubrious and destructive to life. With regard to these observations which are now making on the temperature, weight, and moisture of the air, they seem to have hitherto been of little utility in elucidating the cause of disease. Sydenham remarks,—"Though I have carefully observed the different constitutions of different years, as to the manifest qualities of air, that I might from thence discover the causes of the so great dissimilitude of epidemic disease, yet I must own I have hitherto made no progress, having found that years perfectly agreeing as to the manifest temperature of the air, have, nevertheless, produced very different tribes of diseases, and *vice versâ*."

The same result terminated the patient and long-continued researches of Van Sweitan:—"I carefully remarked," says he, "for ten successive years, three times a-day, the height of the barometer, thermometer, the driection and strength of the winds, the quantity of rain that fell, the various changes of the air, diseases, number of the sick, and also all those who died. However, I do not repent my labour, though I did not thereby gain the least knowledge of the original causes of epidemic diseases." Such observations have been often repeated in different parts of the world, and with no better success.

Cholera Report as it occurred in Kandeish, from the 25th May to the 8th June 1839.—Among the men, women, and children, and the followers of the 15th regiment N. I., TWENTY-FOUR CASES OF CHOLERA HAVE OCCURRED, of which eleven have died, and the remaining thirteen have been discharged cured. Among those of the head quarters of 20th regiment M. N. I., forty cases have occurred, ten have died, and the rest recovered. In the camp bazar sixty-nine individuals of the different castes, in a few days, were carried off. After the commencement of the epidemic, the Dher caste, who live on diseased animal food, suffered more severely than the others.

In one house, near the bazar, three persons died in the same night; in another house, three more were lying affected with the disease. It prevailed severely in one corner of the 20th lines. First a havildar was seized, then his brother, and afterwards his wife. They were all living in the same place. Close to these, three or four others were affected. Thence this scourge took a sweep towards the river, destroying five of the inmates of the poor's asylum. In the lines of the 15th regiment, eight or nine Maratha sepoys, who lived in one mess, suffered severely; three or four of them were attacked in succession, and died.

In addition to the above twenty-one cases, may be enumerated those which occurred among the women and children of the 5th regiment N. I., and of which six died.

In the country villages near the camp, the epidemic was of such a malignant character, that few who were attacked survived. It was stated by the assistant collector, that the recovered cases were only from among those who had taken medicine.

The termination, or sequelæ, of the disease, were as usual, inflammation of the stomach, dysentery, and affections of the head. In one case, the glands of the axilla and neck swelled, and suppurated extensively; buboes formed in both groins, and large formations of pus took place below the fascia lata of the thigh, all of which were well laid open.

Without entering into the labyrinth of the causes of this dreadful scourge, which, from their nature and mode of action, are involved in great obscurity, it may be proper to remark, that there is one external agent, electricity, which acts in such a powerful and mysterious manner on the animal frame, and, at the same time, exists in such a peculiar state in the climate of the Deccan, that an allusion to it may be permitted.

The subject will, perhaps, appear more deserving the notice of medical officers, from the interesting and wonderful experiments of Dr Wilson Philip, Weinhold, and others, proving the nervous power and electricity to be identical, and the brain and spinal cord merely an electric machine, conveying this influence through the medium of the nervous system, to the different organs of the body, and producing respiration, digestion, &c. As these experiments may not be generally known, it may be well to describe one or two of them.

Weinhold cut off a cat's head, and when its arterial pulsation had ceased, took out the spinal marrow, and placed in its stead an amalgam of mercury, silver, and zinc; immediately after this was done, the pulsation recommenced, and the body made a variety of movements. He took away the brain and spinal marrow of another cat, and filled up the skull and vertebral canal with the same metallic mixture; life appeared to be instantaneously restored; the animal lifted up its head, opened and shut its eyes, and, looking with fixed stare, endeavoured to walk; and whenever it fell, tried to raise itself again upon its legs. It continued in this state twenty minutes, when it fell down, and remained motionless. During all the time the animal was in this state, the circulation of the blood appeared to go on regularly; the secretion of the gastric juice was more than usual, and the animal heat was re-established.

Dr Wilson Philip divided in several rabbits the eighth pair of nerves, which are distributed chiefly to the stomach. Invariably, after the operation, the parsley which they had eaten remained without alteration in their stomachs; and the animals, after evincing much difficulty of breathing, died, apparently from suffocation. But when, as was the case with other rabbits similarly treated, the galvanic action was transmitted along the course of these nerves, no difficulty of breathing occurred. After the voltaic action had been kept up for twenty-six hours, the rabbits were killed, and the parsley was found as perfectly digested as it would have been in healthy rabbits, fed at the same period. These experiments were repeated several times with similar results.

Dr Copeland remarks, that a severe blow on the cæliac ganglion will produce instantaneous death, and that the blood will remain dissolved, and exhibit the same appearances as after death by lightning, or by the most virulent poisons. In the remarkable and authentic case of Casper Hauser, who was kept from his infancy until his eighteenth year, in a perfectly dark cage, which he never left, and where he neither saw a living creature, nor heard the voice of man, the effects produced by the north pole of a small magnet were very singular. When it was held towards him, he experienced the sensation as if a current of air were passing outwards from the epigastrium.

The south pole also affected him, although less powerfully; he said it blew upon him. Several experiments were made with the view to deceive him, but his feelings were always very accurate.

In the Deccan, electricity exists in a more or less concentrated state, according to the condensation or the rarefication of the atmosphere, and to the moistness or the dryness of it.

During the cold weather, and hot dry winds, which immediately precede the rain, it passes from animals very rapidly, and is accumulated in large quantities in non-conducting substances. Flannel, taken from the body, and held at a little distance from it, produces an electric current, the effect of which is very perceptible in passing from the body, so as to cause the hairs upon it to stand erect. A more remarkable phenomenon, of a similar kind, takes place while riding. A woollen coat may be observed to attract the hair of a horse's tail. The phenomena of sparks, also, are strikingly seen on suddenly removing a blanket, or any woollen garment.

From all the above circumstances, a conjecture may with much diffidence be hazarded, that this formidable disease may be owing to the different states of atmospheric electricity, acting with more or less intensity through the medium of the nervous system on the blood, and suddenly producing this general and very dreadful scourge.

From the experiments of Weinhold, already described, it appears that electricity has a remarkable effect in restoring animal heat and sensibility. In the case of Colonel Tweedie's servant, the rapid progress of an icy coldness was very remarkable. The fine elastic cushions possessing such exquisite sensibility at the ends of the fingers, were quickly formed into pits. The forearms, when pressed, gave a sensation as if they were cold, soft wax. The body and limbs were covered with a chilly, clammy perspiration.

It would appear that, owing to the want of nervous influence, the blood, in cholera, does not become duly freed of its carbon and oxygenised.

The European sergeant of the 20th regiment M. N. I., was quite cheerful in the morning of the 1st of June, attended muster, and came home in good spirits. This is mentioned to show there was not the slightest fear of cholera to account for the very virulent form of that disease with which he was attacked, and of which he died at 3 P.M. of the same day. Shortly after the attack, the skin became of a mottled blue appearance.

May not all these circumstances be owing to the almost complete abstraction of the electric or nervous fluid from the body.

In the jail of Dhoolia, eighty-three or eighty-four prisoners, in a very short space of time, died; and in the town of Maligaum, five hundred and thirty-four were destroyed by this disease.

There were reports of its ravages from almost all parts of the country around us, north, west, and south—a general panic took place. While the disease was thus progressing, a moist atmosphere suddenly occurred, a very heavy rain fell, followed by refreshing showers at intervals of one or two days. The electric condition subsisting between the body and the surrounding air, was changed, and the disease immediately ceased throughout the whole district.—Abridged from *Bombay United Service Gazette*, August 6, 1841.

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

FRENCH ACADEMY OF MEDICINE.

8th February 1842.

1. *Election.*—M. Royer-Collard was elected to the vacant place in the section of Legal Medicine and Medical Police. 119 members voted,—66 for M. Royer-Collard, 34 for M. Devergie, 15 for M. Mélier, 2 for M. Guérard, 1 for M. Gauthier; and there was 1 blank billet.

2. *Instrument for Evacuating Abdominal Cysts.*—M. Rambaud exhibited a modification of the common trocar and canula, which he had designed with the threefold object of evacuating the contents of the cyst without the risk of effusion into the abdomen, producing an adhesion between the peritoneal lining of the abdomen and the exterior wall of the sac, and establishing a fistulous opening, whereby any fluid thereafter formed in the sac might drain off. A committee was appointed to report on the instrument.

15th February.

1. *On the difference between Blenorrhœa and Chancre.*—A report, which gave rise to considerable discussion, was read by M. Lagneau, on a work upon this subject, published by M. Ricord. While the committee demur to some of M. Ricord's statements, more particularly that in which he asserts that virulent blenorrhœa is the consequence of a chancre in the urethra, they give on the whole a favourable opinion of the work. The report was adopted.

2. *New Apparatus for an Artificial Leg.*—M. Ferdin Martin exhibited a newly invented apparatus for cases where the leg has been amputated at its middle or lower portion. The apparatus, which is designed to render more manageable that part of the stump below the knee, is extremely simple, and can be manufactured at a moderate price.

22d February.

1. *Cause and Prophylaxis of Glanders.*—M. Hamont, founder of the Veterinary School in Egypt, read a memoir on this subject. The author states, that when he left France in 1828, it was the general opinion that glanders did not prevail in hot climates, but on his arrival in Egypt, he soon found cause to change his opinion, it being extremely prevalent in that country. The object of his memoir is to show, that it is essentially a disease of penury, and attacks horses in proportion as the constitution of the breed has been deteriorated by extreme fatigue, and scanty or improper food. Hence the disease is seldom if ever to be met with among *blood* horses in Egypt, not even when exposed to privations, their constitution being better able to endure these. If, therefore, glanders are prevalent in the horses of any country, in addition to the means of prevention connected with proper food and management, it will be desirable to improve the breed by the introduction of Arab blood. The memoir has a special reference to the state of horses in France, and points out the facilities which France possesses for improving its breed of horses.

2. *Spontaneous Gangrene of the Cervix Uteri and part of the Vagina.*—M. Baron communicated a case, where, without any previous symptom of disease of the genital

organs except leucorrhœa, hemorrhage from the vagina suddenly came on, and upon examination, the separated parts were found lying in the outlet. They presented no trace of disease, except a dark coloured line at the point of separation, marking the existence of gangrene. The patient recovered perfectly.

3. *Transposition of Viscera.*—M. Gerdy communicated a case of transposition of all the organs, which presented this very singular peculiarity, that even the cavities of the heart were transposed.

1st March.

1. *Causes and Prophylaxis of Glanders.*—M. Fourcault read a memoir on this subject, differing somewhat in its views from that read at last meeting. A renewed discussion of the subject followed the reading.

2. *Fractures of the lower extremity of the Radius.*—M. Huguier proposed a new apparatus for the treatment of these fractures, whereby the indication of applying continual traction upon the inferior fragment can be attained better than by the methods hitherto employed. It consists of a glove fastening tightly round the wrist, and provided with four straps, whereby the extension is to be effected. Splints so constructed as to prevent the likelihood of their slipping, and of sufficient length to extend somewhat beyond the tips of the fingers, are then to be applied to the anterior and posterior aspect of the fore-arm. The desired traction is effected by passing the straps around the wrist through loops attached for the purpose to the lower extremities of the splints.

3. *On Lithotrity and the use of Alkalies in the treatment of Calculus.*—There were two cases, one of alleged injury of the bladder by lithotrity, and the other where alkaline drinks were said to have cured calculus in three months, to neither of which the reporter was disposed to give credence. The Academy adopted the views of their reporter.

8th March.

1. *Medical Topography.*—A report was read on a paper by Dr Cicala, respecting the medical topography of the island of Santorino.

2. *Committees* were appointed to examine the memoirs sent in by candidates for the different prizes.

3. *Case of Amputation by M. A. Bérard.*

4. *Croup in the Adult.*—M. Huguier exhibited the diseased parts taken from a female aged 24, who had died of croup, at the end of forty hours after the attack. False membranes were found lining the tonsils, pharynx, larynx, and first divisions of the bronchi.

5. *Chronic Glanders in Man.*—M. Tardieu showed the nasal fossa of a man who had died of this disease. The case was interesting as being the first in which the peculiar characters of the chronic form of the disease, as exhibited in the nasal fossæ, had been observed in the human subject.

15th March.

1. *Secret Remedies.*—A report on various proposed secret remedies was read, the conclusions of which were unfavourable to the proposers.

2. *Uterine Injections.*—M. Capuron, in his own name, and that of M. Moreau, reported on a new instrument for this purpose, which had been submitted for the approval of the Academy. The report, which was favourable to the inventor, did not meet with the approbation of the Academy.

3. *New Surgical Apparatus.*—Two reports were read, one upon a new hernia bandage; the other on a new apparatus for fractures, neither of which was very favourable to the inventors.

4. *On Vesico-Vaginal Fistulæ.*—M. Leroy d'Etiolles read a memoir on the treatment of these cases. In the case of small fistulæ where the cautery has been employed, he says that we often fail of success in consequence of the mode in which that remedy is applied. One application is not sufficient, because, though the flow of urine is suspended for some days by the swelling of the edges of the opening, it returns again the moment the sloughs formed by the cautery separate. At this period he recommends a second application to the raw surfaces, with the view of inducing an adhesive action. For larger fistulæ, the author recommends the cutting out a considerable portion of the mucous membrane of the vagina, including the fistulous

opening, and then approximating the raw edges. This is preferable to barely paring the edges of the fistulous opening. For very large openings he proposes to make a new flap taken from the posterior part of the vagina.

22d March.

1. *Modification of the Operation for Amputation of the Thigh.*—M. Lesauvage of Caen proposes a mode of performing the circular operation, whereby the danger of the protrusion of the bone will, in his opinion, be obviated. The chief peculiarity seems to be, that by an inclined position of the retractor, he saws the bone obliquely from above downwards, and then dresses the stump so as to ensure its union in a transverse direction.

2. *Reports of Committees* extremely favourable to the authors, were read on a work of M. Guéretin on scarlatina, and a paper by M. Lafont on enteritis in the cow.

3. *Large Calculus. Lithotrity.*—M. Ricord communicated a case where this operation had been performed without producing any unfavourable local symptoms, but where, nevertheless, the general health continued to deteriorate, and the patient died. On dissection, the left ureter was found enormously distended, with a calculus at its lower extremity, above which the canal was filled with pus, and the kidney itself presented the appearance of a purulent cyst. M. Souberbielle also exhibited a preparation from a person who had calculus, in which the kidneys contained several purulent cysts.

29th March.

1. *Carbonated Sea Water.*—M. Pasquier, apothecary at Fécamp, convinced of the great value of sea water taken internally as a purgative, anthelmintic, and alterative, has devoted his attention to depriving it of those disagreeable qualities which stand in the way of its general use. These qualities are the quantity of animal matter it contains, in consequence of which it neither keeps long, nor bears transport well,—its nauseous taste—and the feeling of weight it causes in the stomachs of persons of weak digestion. To free it of animal matters, he has caused the water to be taken at a distance of two or three leagues from the land, and at the depth of several feet, and then filtered; while to improve the taste, and render it more easy of digestion, he has charged it with carbonic acid to the amount of four or five volumes. Thus prepared, it will keep for an indefinite length of time, and has been readily taken by invalids who had a strong repugnance to ordinary sea-water. In doses of three to four tumblers, it will be found a gentle and efficacious purgative for adults,—in smaller doses it may be given to children as an anthelmintic, and in alterative doses, it possesses great virtue against scrofula, and other taints of the constitution.

2. *Case of enormous Tumour of the Neck.*

3. *Lesion of the Brain without Paralysis.*—M. Velpeau read a report on a case communicated by M. Poilroux, where there had been a fracture of the skull with depression, and a portion of it had been removed by a cutting instrument. Through this opening considerable portions of the cerebral substance protruded and separated by the process of suppuration, notwithstanding which there was no paralysis.

4. *Clinical Report of the Hospital at Boulogne. By M. Gimelle.*

5. *Epidemic Dysentery at Versailles. By M. Artigue.*

6. *Dislocation of the First Piece of the Sternum on the Second.*—M. Maisonneuve exhibited preparations of this accident, taken from two patients who had both fallen from great heights, and died of injuries of the spine received in consequence.

7. *Tumours developed in Cicatrices.*—M. Gimelle exhibited to the Academy a patient in whom there were several such tumours in the cicatrices of old wounds; and a discussion of some length followed regarding the nature of these tumours, which is given in the Periscope of this Number.

8. *New Forms of Instruments.*—M. Bégin exhibited a new Rachitome, and M. Leroy d'Etiolles a modification of an instrument for the extirpation of the tonsils.

5th April.

1. *Elections.*—The Section of Medical Pathology reported that they had chosen M. Recamier, president; and M. Dubois (d'Amiens), secretary and reporter.

2. *Phthisis Pulmonalis.*—Proposal by M. Louis to found a medical commission charged to travel in foreign countries, with the view of investigating the disease.

3. *Improvement of the Breed of Horses in France. By M. Hamont.*

4. *Stone in a Child.*—M. Guersent exhibited to the Academy a child 10½ years old, which had twice had lithotrity performed upon it, at the ages of four and eight. Each time, however, the symptoms of calculus returned. At length M. Guersent performed the bi-lateral operation for lithotomy, and extracted numerous fragments of calculus. The child had made a good recovery.

5. *Foreign Body in the Trachea of a Child. Tracheotomy and Cure. By M. Guersent.*

6. *Large Cyst on the Surface of the Brain. By M. Mitivié.*

FRENCH ACADEMY OF SCIENCE.

17th January 1842.

1. *Functions of the Thyroid Body.*—M. Magneen brought forward the remainder of his memoir on this subject. He stated, that he had frequently extirpated this body from animals, and always found that they survived twelve or fifteen days after the operation, but seemed, in consequence of it, to suffer much uneasiness. When the animals were obliged to run before the extirpation of the gland, he found that it contained less than its ordinary quantity of blood. He believes that the use of the thyroid gland in the fœtus is to compress the carotid trunks, and, by thus influencing the energy of the vertebral arteries, cause the development of the muscular rather than the cerebral organs.

MM. Magendie, Flourens, and Breschet were ordered to examine and report upon this subject.

2. *Gelatine as an Aliment.*—M. Ganal communicated a letter which he had received from the Minister of the Interior, the purport of which was, that until the Academy gave an opinion on the question, the use of gelatine in the charities could not be interdicted by the government.

31st January.

1. *Development of Heat during the Incubation of Reptiles.* By M. Duméril.

2. *Bite of the Scorpion.*—M. Guyon caused scorpions to bite birds, cats, and Guinea pigs: they generally died, but larger animals survived the injury. It appears that these experiments were made with small scorpions of the genus which he terms *Scorpio occitans.*

3. *Nicotine. By M. Barral.*—He has obtained a pure alkali from tobacco, which possesses poisonous properties of extreme energy and rapidity of action.

[Some other subjects of less interest were also brought before the Academy.]

7th February 1842.

Nothing was said which requires to be reported.

14th February.

1. *Memoir on Myotomy.* By M. Jules Guérin.

2. *Acephalous Monsters.*—M. Isidore Geoffroy Saint-Hilaire stated, that the acephalous fœtus of a sheep was lately brought to the Museum of Natural History. This, he remarked, was a kind of monstrosity much more common in man than in any other animal. In the present case there were all the characters of an acephalous human monster, such as, imperfect development of the fingers, twisted feet, imperforate anus, and ill-formed genital organs: and the monstrous fœtus was a twin. He also remarked, that in the sheep as well as the human species, the product of conception was generally single or double.

M. Breschet.—The heart is always wanting in true acephalous monsters. Was it so in this case?

M. Saint-Hilaire.—I have not yet opened the thorax.

3. *Influence of the Pneumo-Gastric Nerve upon the Stomach.*—M. Longet read a note on the question:—Do the movements of the stomach depend on the eighth pair of nerves, or on the great sympathetic? Experimenters are far from being agreed as to the source from which the stomach derives its motive power. On both sides of the question are ranked great authorities. M. Longet, upon opening dogs, has found that irritation of the pneumo-gastric nerve in the majority of cases caused evident

contractions of the stomach. During the experiment it frequently appeared as if strangled by the effects of this irritation. In other instances, this phenomenon was not remarkable, and in some cases could hardly be observed. Having repeated the experiment on forty dogs, M. Longet discovered the causes of the differences in the results. If the animal were opened when digestion was going on in the stomach, the movements produced by irritation of the pneumo-gastric were more decided, and less so, as the time was distant from this, and the organ retracted. These facts explain the difference of authors on a point so easily verified.

M. Longet has also observed, that the nearer to the stomach the irritating substances are applied to the nerve, so much more manifest are the contractions of the stomach.

In galvanizing or irritating the branches of the great sympathetic and the semilunar ganglions, we never observed the slightest movements produced in the walls of the stomach.

This note was remitted to the same commission as was nominated to examine the other recent experiments of M. Longet.

4. *Revaccination.*—M. Giraud announced that he had revaccinated individuals, and produced a cow pock, which went through all its stages. He had also observed small-pox, in those who had been vaccinated. From these facts, he argued in favour of revaccination.

5. *New Amputating Saw. M. Eugène Robart.*—To avoid the locking of the saw, when sawing through the bone, M. Robart proposes to add to the common saw, two lateral and parallel pieces, so that, when the instrument is fixed by the pressure of the two ends of the bone, it can at once be relieved, and made to work easily, by slipping out these side-pieces.

6. *Structure of the Mouth of Serpents.*—M. Lamarre Picquot, in reference to a former discussion, stated, that he had never affirmed that all serpents could suck cows; on the contrary, he had asserted, that they had not this faculty, excepting the *coluber coros*, the teeth and lips of which were so constructed, as to make them capable of being used in sucking.

M. Duméril requested that M. Picquot would exhibit to the Academy the head of this serpent, for if the fact was as he had announced it, it would be the only example with which he was acquainted, of a serpent's mouth so constructed.

7. *Cure of Deafness by the Rarefication of Air.*—M. Ferrier mentioned, that the application of the air-pump to the treatment of deafness, lately announced by Dr Turnbull, was nothing new, and had been long ago employed by Darwin.

8. *Colouring of Bones by Madder. By M. Gabillot.*

9. *Application of the Subcutaneous Method to the Ligature of Arteries. By M. Tavignot.*—An account of M. Tavignot's views on this subject we have already given.

21st February.

1. *Treatment of Aneurisms of the Heart.*—M. Larrey read a memoir upon aneurisms of the heart. In a former paper, he had already established that this disease is not incurable, if treated before it has passed into its last stage. The means which he employs are cupping, and afterwards moxas over the left hypochondrium, general bleeding, and the application of ice, (especially at the commencement); diluents and anti-spasmodics, properly administered, also contribute to accomplish a cure. The moxa, according to M. Larrey, possesses an excellent property, the effects of which reach even to the heart, and powerfully contribute to restore its enfeebled walls to their normal state. It is remarkable enough, that ice seems to act in the same way. In support of these principles, M. Larrey detailed the cases of four women whom he presented to the Academy; all of them had been affected with aneurism of the heart, and with many of them the disease had reached an alarming severity; one of them had had 55 moxas and 100 cuppings.

2. *Colouring of Bones by Madder.*—M. Serres caused to be read his paper on this subject, which gave rise to considerable discussion between M. Flourens and himself. He maintains, that the coloration of the bones of animals fed on madder, is in no way connected with the process of nutrition, but a simple deposition of colouring matter in the bony tissues, the madder forming an insoluble product with the phosphate of lime. Among other facts adduced in support of this view, he stated, that when bones are plunged in a decoction of madder, or when pieces of bone are introduced into

the flesh of an animal fed on it, they are as effectually coloured as the bones of the animal living on it.

3. *Galvanic Phenomena observed in warm-blooded Animals.*

28th February.

1. *Mineral Waters in Algeria.*—This is a notice in a letter from M. Combers, of some hot springs in Algeria, which it has been stated contain arsenic. The author transmitted to the Academy some fragments of crystals found near the springs, which a committee were appointed to analyse.

2. *Microscopic Anatomy.*—M. Mandl presented to the Academy the last part of his "Microscopic Anatomy." It is devoted to the description of the ligamentary appendices, hairs, nails, &c., and the author has established that they are organised tissues.

7th March.

1. *On the Origin, mode of Formation, and Terminations of the Globules of the Blood.*—M. Donnè read under this title a memoir, of which the following is an abstract: There exist in the blood three kinds of globules—first, the red, or blood-globules, properly so called; next, the white, whose existence has only been recognised lately; and thirdly, minute globules of chyle. The red globules consist of a flattened vesicle containing, in fishes and reptiles, (where the vesicles are of an elliptical form) fluid surrounding a solid centre; and in mammalia (where the shape of the blood-globule is circular) fluid only. The white globules are colourless, spherical, slightly irregular in shape, and of a granular appearance. They exist in the blood of all animals to a far greater amount than has been supposed, and can be observed circulating in the interior of the vessels along with the blood. They appear to consist of a vesicle containing in its interior three or four solid granulations. The third kind of globules are extremely minute grains, not exceeding $\frac{1}{350}$ millimetre in diameter, and similar to the globules of the chyle. M. Donnè considers these varieties to be the blood-globules in different stages of development. The minute globules just described are the product of the chyle, which is constantly poured into the blood; in the course of their circulation in the vessels, they gradually coalesce by threes and fours, and become enveloped in a layer of albumen, and so come to unite into the white globules. These again undergo by degrees certain changes—they become flattened, coloured, and the granular matter in their interior is rendered homogeneous or is dissolved; in fact they are transformed into the blood-globules, properly so called. But the existence even of these is only transitory; at the end of a certain period they are dissolved in the blood, and thus come to constitute its fluid part. Certain substances are capable of being immediately transformed into blood-globules by direct mixture with the blood—of this, milk, from its difference of colour, affords the best example, as may be shown by injecting it in certain proportions into the veins of animals. The spleen seems specially destined to effect the transformation of the globules—at least in this organ one finds the greatest number of globules in all stages of their formation. If we examine the circulation in the organs best supplied with blood, we never find the blood-globules detaching themselves from the vessels to combine with the organs or organic elements—but the fluid part of the blood transudes through the vascular parietes, and is probably to be regarded as the essentially organising fluid.

2. *On the Standing Posture of Animals.*—M. Mainat read a paper to prove that the standing posture in animals is not an incessant contraction of the muscles, and that in maintaining the erect position which is natural to him, man rests upon one limb only, not, as is generally supposed, upon both. The mechanism by which this posture is maintained is, in addition to those ligaments already known and described, a fibrous band, hitherto known only as a portion of the fascia lata, but which he considers a true articular ligament put upon the stretch in the standing posture. He calls it the "Ilio-trochantero tibial ligament," and describes it as being from four to eight centimetres broad, rising from the outer side of the crest of the ileum, and passing down the thigh to be inserted on the outside of the knee. In the course of its descent it touches the trochanter major, to which it is slightly bound down.

14*th March.*

Composition of Atmospheric Air.—M. Dumas stated the result of some experiments on this subject which had been instituted in various parts of Europe by different individuals, in compliance with a recommendation made by him some months ago.

21*st March.*

1. *Solution of Urinary Calculi.*—M. Pelouze, in his own name and that of M. Gay-Lussac, gave in a report on a work by M. Leroy d'Etiolles upon this subject. The conclusions at which the author arrives are the following:—1. That certain agents of an acid or alkaline nature exert a solvent action upon calculi, which bears chiefly upon the mucous matter by which the solid molecules, whether saline or acid, are united into one mass. 2. That without absolutely denying the action of alkaline drinks upon urinary concretions, it is at least certain that they will not destroy a stone unless it be very small. 3. That the injection of such substances, though in principle a more efficacious procedure, will be found in practice to present many difficulties to the surgeon. 4. That the combination of lithotrity with attempts to dissolve the calculus, will offer more advantages than the latter method alone, since the stone will, when broken into fragments, offer a larger surface to the action of the solvents. But on the other hand, as it is the first breaking of the stone which is attended with most difficulty in the operation of lithotrity, is it warrantable after this has been surmounted, to enter on a course of treatment more tedious and less certain?

2. *Microscopic characters of the Bile. By M. Bouisson of Montpellier.*—The microscope discovers three sorts of elements in the bile:—1. Laminæ of colouring matter of a greenish yellow hue and irregular in form and dimensions. 2. Corpuscles of regular form and crystalline appearance, less numerous than the former class of objects, and which consist of cholesterine suspended in the bile. 3. Globules, variable in quantity, which are sometimes arranged in small coherent masses, sometimes combined with the particles of colouring matter. These are portions of the mucus of the gall-bladder. From these observations it follows that the colouring matter is not entirely dissolved in the bile, but that a part is naturally precipitated—that the cholesterine which was supposed to exist in a state of solution exists actually in one of suspension—and that the mucus serves to promote the cohesion of these two elements. Hence too we derive a simple theory of the mode of formation of biliary calculi. The greater number of them are composed of matters already existing in the bile in an isolated state, and where agglomeration is capable of being produced by extremely simple physical causes. In fact, every person in the state of health may be said to bear about him an infinite number of small biliary calculi.

3. *Phenomena of Nutrition in the Osseous System. By M. Chossat.*—Proceeding on the fact, that many animals, birds among others, require to mix with their aliments a quantity of earthy matter greater than the aliments naturally contain, M. Chossat has fed pigeons with grain from which every earthy particle had been carefully excluded, giving them, at the same time, as much water as they chose to drink. The result was, that the bones became so thin as to be broken with the greatest ease, and in one case, examined after death, the bony matter of the sternum had disappeared in various points. M. Chossat also announced, that he had succeeded, to a certain extent, in depriving bones of their earthy matter, by means of the galvanic pile, and proposed to apply this treatment to the destruction of sequestra in necrosed bones.

4. *Application of a recently invented process of Gilding to Surgical Instruments. By M. Charrière.*

28*th March.*

On Lithotrity in Cases complicated with Retention of Urine. By M. Aug. Mercier.—This is the description of a new form of instrument, whereby the author conceives that the operation of lithotrity and the evacuation of the fragments will be rendered more feasible in cases complicated with retention of urine, than it is now generally considered to be.

4*th April.*

On the Solution of Urinary Calculi. By M. Petit.—In a letter to the Academy, drawn forth by the report on this subject, read at the meeting of 21st March, M. Petit expresses his conviction, from long experience of the of the waters of Vichy in these complaints, that alkaline drinks are much more generally efficacious than medical

men are disposed to allow. He then meets the objection, that these drinks may, by long-continued use in large quantities, neutralize the free acids of the urine, and so favour the formation of calculi of phosphate and carbonate of lime and magnesia. This objection he holds to be purely theoretical, and quite opposed to observations made on persons drinking the waters of Vichy, as also on workmen in soda manufactories, whose urine, as is well known, is almost always alkaline.

MEDICO CHIRURGICAL SOCIETY OF EDINBURGH.

Wednesday 4th May.

DR MACLAGAN, President, in the chair.

1. *Senecio Jacobea.*—Dr Dunsmure communicated the result of some trials which he had made, of the extract of Senecio Jacobea in the treatment of gonorrhœa. The first cases in which it was employed, appeared to show that the remedy had some power over the disease, but more extensive trials have led to conclusions decidedly unfavourable as to its efficacy. It was used in 34 cases, of which 8 presented themselves only once, leaving 26 for observation. Of the 26:—there were cured 5,—improved but not cured 11,—not improved 10. Of the 11 cured, there were acute cases 3,—semi-acute 8. Of the 10 not improved, there were acute 3,—semi-acute 2,—chronic 5. Dr Dunsmure read to the Society a letter from Mr Shaw of the Middlesex Hospital, to Dr Douglas Maclagan, from which it appeared, that though at first the extract seemed efficacious, its power of checking gonorrhœa was not maintained during subsequent trials. This, Mr Shaw observed, might be owing to the extract which he latterly used being prepared from the plant at the later part of the season, when it runs to seed. The extract which Dr Dunsmure used had also been prepared late in the year.

2. *Tinea Favosa.*—Dr J. H. Bennett read a paper on the nature, pathology, and treatment of Tinea Favosa, which was published in full in the last Number of this Journal.

3. *New Members.*—Dr John Hay, Dr A. Peddie, and Dr J. H. Bennett, were admitted ordinary members of the Society.

Wednesday, 1st June.

DR MACLAGAN, President, in the chair.

1. *Report of Edinburgh New Town Dispensary.*—Dr Omond, on the part of the medical officers of this institution, laid before the Society the statistical report for the year 1841. We expect to receive it for publication either in full or in an abstracted form.

2. *Hemorrhagic Diathesis.*—Mr James Miller, Lecturer on Surgery, read a paper on the treatment of the hemorrhagic diathesis, which appears at p. 567 of this Number.

Dr Hay observed in relation to the case of hemorrhagic diathesis formerly read by him to the Society, (*vide* our Number for March, p. 264,) that Mr Miller had been led into some inaccuracies as to the facts of the case. Dr Hay stated, that when called to the case he had communicated to the Society, thirty-six hours after the extraction of the tooth, there were many coagula in the mouth, and in the bason the patient had been using, and at the time no idea was entertained of the hemorrhagic diathesis. As the bleeding had abated, and his visit was during the night, he did not remove the compress till day-light enabled him to examine the state of the mouth more satisfactorily. He then found the inside of the cheek and gums extensively blackened by the lunar caustic, and considerable ecchymosis of the cheek, produced by the firmness of the pressure. As the bleeding continued notwithstanding these means, he applied the cautery, using a conical urethra sound, and inserting it into the socket of the tooth, without materially extending the destruction of part. The cautery suspended the bleeding for several hours. In the second or more advanced stage of the case, the whole gums became swollen, and had a tendency to overlap the edges of the incisor teeth; the bleeding was then equally great from the anterior gums as from the part whence the tooth had been extracted.

Mr Miller explained the occurrence in his paper of the inaccuracies pointed out by Dr Hay; but as the substance of this explanation appears in this Number in the form of a note at the end of the memoir, we need not here repeat it.

In relation to the use of sulphate of soda, Dr Hay observed, that he had seen considerable benefit derived from its employment in purgative doses, in the treatment of the somewhat analogous disease, *purpura hemorrhagica*.

Dr Bennett remarked, that the non-coagulability of the blood, in cases of hemorrhagic diathesis, might perhaps be owing to a change in the blood corpuscles, by which the tendency to form aggregation of the clot might be diminished.

Professor Alison was inclined to ascribe it rather to a change in the vitality, than to a want of fibrin.

Professor J. Y. Simpson mentioned a case of hemorrhagic diathesis in which, on account of a uterine affection, leeches had been applied, the bleeding from which had proved troublesome. Purpurous spots had likewise appeared, and the patient had been exposed to considerable danger from a severe attack of epistaxis. It was remarkable that, in this instance, the well-known increase in the fibrinous part of the blood during pregnancy, (the state of the patient at the time,) and the repeated application of blisters, had not prevented the hemorrhagic tendency. Abortion occurred in this case at a subsequent period, but without any remarkable loss of blood.

3. *Preservation of vaccine matter.*—Dr Graham Weir read a notice regarding the preservation of vaccine matter. He had recently succeeded in performing successful vaccinations with matter kept for twenty years, and which, during that period, had been four times carried to India and back again. Some of the matter (originally obtained from the London Vaccine Board,) had been preserved in the dry state between plates of glass carefully excluded from the air; the remainder was liquid, and had been kept in small glass tubes hermetically sealed. The tubes consisted of a small bulb about three-eighths of an inch in diameter, furnished with a capillary neck about two inches long. The bulb being gently heated so as to rarefy the contained air, the mouth of the tube is applied to the punctured vesicle; a sufficient quantity of lymph for one or two vaccinations thus enters the tube, which can then be hermetically sealed at the point without any risk of the matter being injured by the heat employed. It is consequently got out by breaking off the point, and expanding the air of the bulb by the heat of the hand.

Dr Gardiner mentioned that, some years ago, he had received from a French physician a number of small tubes, (which he exhibited to the meeting,) intended to preserve vaccine lymph in the liquid state. They were to be filled by allowing the matter to flow into them by capillary action: the ends could then easily be hermetically sealed. The matter is obtained from them by breaking off both points and blowing into the tube, one end being inserted into a small glass pipette provided for the purpose.

MISCELLANEOUS MEDICAL NEWS.

Sir R. Chermside, who enjoys a well-merited reputation as a Physician in Paris, has lately, we are glad to observe, received the ribbon of the Legion of Honour from his majesty the king of the French.

London University. Successor to Dr Roget.—Mr Rymer Jones has been elected examiner in the room of Dr Roget, whose resignation we announced in our May number.

The Museum of Materia Medica and Pharmacy attached to the London Ophthalmic Hospital, Moorfields, is open daily from eight to four o'clock. Cards of admission may be obtained by application at the hospital to Mr Thomas Heward, house-surgeon.

Chair of Surgery in the University of Edinburgh. (*Vide* June No. p. 554.)—The election has been fixed by the Town Council for the 19th of July. In the mean time the candidates are circulating "Testimonials," some of which are very curious. Dr Handyside has withdrawn his application for this chair.

Chair of Pathology in the University of Edinburgh.—This chair has been declared vacant; (*Vide* our October No. p. 768, and December No. p. 924.) and advertisements calling upon candidates to come forward have been inserted in the public journals. The election will take place on the 9th August. The candidates are the

same, who stood when a vacancy was expected last year, viz. Dr Craigie, Dr Henderson, Dr John Davy, Dr Peter Handyside, and Dr John H. Bennett. Dr Craigie conducted the duties of the chair during the last session, as the substitute of Dr John Thomson, by whose resignation the present vacancy is occasioned.

REFORM IN THE UNIVERSITY OF EDINBURGH.—It has been rumoured for some time past, that the Town Council, with the concurrence of the Senatus Academicus, intend henceforth to allow candidates for the degree in medicine to take a certain number of extra-academical classes either in Edinburgh or elsewhere. This salutary regulation will be a great boon to the medical students who crowd annually to Edinburgh, and will unquestionably add to their numbers.

COLLEGE OF SURGEONS IN LONDON.—The studentship in human and comparative anatomy, founded by the College, was awarded on the 7th June, after a severe competition, to Mr James Dunn of the school of anatomy, Grosvenor Place. There were 13 candidates.

HOMŒOPATHY IN BERLIN.—The *Gazette Médicale* of Montpellier, quoting from the *Courrier du Midi*, announces that a homœopathic clinical hospital has been opened at Berlin.

HOMŒOPATHY AT MUNICH.—A correspondent of the *Gazette Médicale* of Strasburg, writing from Munich, says, that by a government order issued on the 15th of April, the practice of homœopathy has been interdicted both in the prisons devoted to those condemned to perpetual labour, and in the hospitals for the poor, till new and more satisfactory statements have been collected regarding its therapeutic capabilities.

OBITUARY.

DEATH OF MR HENNELL OF APOTHECARIES' HALL.—On the 4th of June this gentleman met his death at Apothecaries' Hall under the most distressing circumstances. The deceased was making trial of some fulminating mercury, which he had prepared for the H. E. I. C., when, instead of exploding a minute quantity as he intended, the whole which he had manufactured suddenly exploded, and blew the body of the unfortunate gentleman to atoms. Mr Hennell was much respected, and considered by every one who had an opportunity of judging of his conduct in the laboratory, as a most careful experimenter.

At Brighton, on the 5th April, Dr Kelly, aged 86, formerly of Finsbury Square, London.

On the 14th April, at Kingsbridge, Devon, John Kerby, Esq., assistant-surgeon, Madras artillery.

On the 25th April, at Cheltenham, Hill Morgan, M.D., aged 64, of the medical board, Bombay.

Lately at Calcutta, John Bourchier, M.D., of the Bombay medical service.

On 3d March, at Bellary, J. Boyd, Esq., assistant-surgeon, 32d N. I.

On the 7th January, at sea, James Binning, M.D.

On the 27th May, at his house Drummond Place, Edinburgh, in his 79th year, Dr Thomas Spens, Fellow of the Royal College of Physicians of Edinburgh, and Treasurer to the College. Till within the last few years Dr Spens was one of the ordinary physicians of the Royal Infirmary.

Lately, at George Town, Demerara, Ewen M. Smith, M.D.

On the 9th May, at Hyères, near Toulon, Dr Andrew Blake, native of Dublin, aged 57 years. Dr Blake entered the army in 1805, as assistant-surgeon of the 98th regiment, and served with that distinguished corps in America. He was taken prisoner in returning to Europe in 1807, and was detained seven years in France. In 1802 he was appointed surgeon to the depôt of British prisoners in Cambray. He afterwards served in the army of occupation, and went out to the West Indies with the 5th regiment of foot. In 1825 he entered the 7th dragoon guards, in which regiment he remained till 1830, when he retired from the army after a service of twenty-six years. In 1831 Dr Blake was elected physician to the Nottingham Lunatic Asylum, which office he was obliged to relinquish in January last, in consequence of ill health. The deceased was author of an excellent treatise on *Delirium Tremens*, which was reviewed in this Journal. (June 1841, p. 431.)

Lately, at Worthing, Jeremiah Gladwin Cloves, M.D., aged 49.

On the 16th May at Jersey, H. F. Dove, Esq., M.R.C.S.

BOOKS RECEIVED.

1. An Introductory Lecture on Pictorial Anatomy, delivered to the students of the School of Design of the Honourable the Commissioners of the Board of Trustees for the Encouragement of Scottish Manufactures, and published at the request of the Honourable Board. By James Miller, F.R.S.E., F.R.C.S.E., Lecturer on the Principles and Practice of Surgery, Assistant-Surgeon to the Royal Infirmary, Lecturer on Pictorial Anatomy, one of the Council of the Royal Medico-Chirurgical Society of Edinburgh, &c. 8vo. pp. 32. Edinburgh: Adam and Charles Black. 1842.

The cause of the publication of this admirable discourse is explained by a letter to the author from Sir Thomas Dick Lauder, Bart., Secretary to the Board, in which, after speaking of the "universal gratification which was produced by Mr M.'s eloquence among the very numerous audience who listened," when it was delivered, he adds,—"As the Commissioners conceive that it would be highly desirable that the lecture should not be confined to the walls of this building within which it was spoken, I am farther instructed to request, that if you have no private objection, you will have the goodness to order it to be immediately printed and published, that its usefulness may be more generally diffused."

We think that the views so eloquently brought before artists by Mr Miller, are calculated to do much good. He shows that a knowledge of anatomy is not productive of stiffness and pedantry, as some have ignorantly asserted; but that a certain acquaintance with this science is one of the many accomplishments essential to the painter and the sculptor. The following passage points out, that when anatomy was not cultivated, art languished:

"The ancient Egyptians, we are told, had but little knowledge of the human form; their figures were but superficial transcripts of individual Nature. And while we thus learn their inferiority in Art, we are at the same time made aware that they dared not touch a dead body for the purpose of dissection, and even the embalmers risked their lives from the hatred of the populace.

"In Greece it was that Art first approached perfection. And there its golden age extended from the time of Pericles, to that of Alexander the Great. We find that, during the same period, Anatomy had begun to be cultivated, both by the physician, and as a branch of general science. The anatomical observations of Thales, Pythagoras, and Alcmeon, prepared the way for the more connected inquiries of Hippocrates, who gave oral instructions in Anatomy, as well as the art of healing—and thus disclosed its mysteries to the world. And Diocles Carystus, the most distinguished of his successors, was as celebrated for proficiency in Anatomy, as for his skill in Surgery. Hippocrates was all but cotemporary with Phidias—Diocles with Praxiteles and Lysippus. It was not Anatomy as it appeared under Vesalius in the sixteenth century. It was not sufficient for the purpose of either the physician or the surgeon; and consequently, we find the healing art then poor and impotent, as compared with its present condition. It extended little farther than a knowledge of the skeleton, muscles, and larger internal organs; for all the minutiæ of the science were as yet unexplored. But this was just what was most needful for Art; and it was this amount of anatomical knowledge that enabled the artist to form from his beautiful models those 'marble miracles of grace,' in regard to which it may be said, that

'Vanquish'd Nature own'd herself outdone.'

On the dismemberment of Macedonia, after the death of Alexander the Great, the arts and sciences took up their chief abode at Alexandria, under the protection of Ptolemy Soter. And here, for a short time, dissection of the human body was freely conducted under Herophilus and Erasistratus, the two great heads of the Egyptian medical school. At this time, however, letters were cultivated in preference to art. Had other circumstances, besides anatomical knowledge, been favourable to the latter, it would, doubtless, still have retained all its highest splendour. But, as it was, one bright interval alone was granted previous to decay—'the struggling gleam of the expiring taper—the farewell ray of a sun, about to set as if for ever.'

'Then did each Muse behold her triumphs fade—
Then pensive Painting droop'd the languish'd head;
And sorrowing Sculpture, while the ruthless flame
Involved each trophy of her sister's fame,
Fled to sepulchral cells her own to save,
And lurk'd a patient inmate of the grave.'

Art did not revive till after the dark ages. Neither did the progress of Ana-

tomy. Even Galen had no knowledge of this science, except as derived from the older authors, and from his own dissection of apes. *Once* he had an opportunity of examining two human skeletons preserved in Alexandria. And the Arabian surgeons had to rest contented with the writings of the Greeks on the subject of Anatomy, its study being strictly forbidden by the Mahomedan religion. Art then lay dormant.

"In the fourteenth and fifteenth centuries, a revival commenced, chiefly, if not entirely, by imitation of the antique, many specimens of which had been brought directly from the East to Pisa. But Art was still feeble.

"Towards the beginning of the sixteenth century, however, arose an era, bearing a striking resemblance in its leading features to that of Pericles, and adorned with the mighty names of Leonardo da Vinci, Michael Angelo, and Raphael. Da Vinci, (a pupil of the celebrated anatomist, Marc Antonio della Torre,) with talent for every pursuit, had yet no steadiness for any one. But Buonarotti, to the highest gifts added indomitable perseverance, and became profoundly acquainted with Anatomy. Is it unreasonable to infer, that without this he never could have reached in safety that unknown world of ideal art into which his ardent genius forced his daring hand? Da Vinci, however, first united the science of Anatomy with that of Painting, and both with Nature; and thus may truly be said to have prepared art for the coming greatness,—a greatness which was carried to a giddy height by his brethren in the triumvirate. *At the same time, exactly*, the labours of Vesalius, Eustachius, and Fallopius, at Padua, Pisa, and Rome, raised Anatomy on a new foundation, and thereby began an era almost as bright for medical science as for Art. Surely this was not a mere coincidence."—Pp. 26—29.

2. Observations on the Admission of Medical Pupils to the Wards of Bethlehem Hospital, for the purpose of studying Mental Diseases. Second Edition. By John Webster, M.D., &c., one of the Governors. 8vo, pp. 32. London: J. Mitchell & Co., Rupert Street, Haymarket. 1842.

This pamphlet presents important subjects of reflection to all who are engaged either as physicians or managers, with the direction of lunatic asylums, and the treatment of mental disease.

3. A Letter to the Right Honourable Lord Francis Egerton, President Elect of the British Association for the Advancement of Science, containing Observations on Statements made by its Officers in the volume of the Transactions, published in April 1842. By Alexander Nasmyth, M.R.C.S., F.L.S., &c., &c. 8vo, pp. 58. London: John Churchill, 1842.

In noticing (October 1841, p. 731) the valuable little work of Mr Nasmyth "On the Development and Structure of the Teeth and Epithelium," we stated that in an introduction "he successfully vindicated his right to discoveries, of the honour of which it had been attempted to deprive him." On that occasion we did not enter upon the personal disputes between him and Mr Owen, nor the controversy between Mr Nasmyth and the Council of the British Association. Now also we leave the subject, with the opinion already expressed regarding the originality of the discoveries.

4. Dr Hooper's Vade Mecum; or a Manual of the Principles and Practice of Physic. New Edition, considerably enlarged and improved; with an Outline of General Pathology and Therapeutics. By William Augustus Guy, M.B. Cantab., Professor of Forensic Medicine, King's College, London; and Physician to the King's College Hospital. 12mo. pp. 493. London: Henry Renshaw, 1842.
5. The Anatomsit's Vade Mecum; a System of Human Anatomy, by Erasmus Wilson. With 167 illustrations by Bagg. Second Edition, foolscap 8vo, pp. 595. London: 1842.

The clearness of the descriptions, and excellent arrangement, combined with the surpassing beauty of Mr Bagg's illustrations, the admirable typography, and moderate price, entitle all concerned in its publication to the gratitude of those who require a *cheap and sufficient text-book of anatomy.*

6. The Theory and Practice of Midwifery. By Fleetwood Churchill, M.R.I.A., &c., &c. 8vo, pp. 471. London: Renshaw, 1842.

An excellent and beautiful manual. The statistical part of the subject is very ably and *instructively* handled.

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations upon the Statistics and Pathology of the Continued Fever of Edinburgh. By* JOHN REID, M.D., F.R.C.P.E., *Chandos Professor of Anatomy and Medicine in the University of St Andrews, and lately Pathologist to the Royal Infirmary of Edinburgh.*

DURING my residence in the Edinburgh Royal Infirmary, I prepared, at very considerable expense of time and labour, the materials for the following statistical tables:—

TABLE I.

Number of Fever Patients admitted into the Infirmary each Month, from 1st July 1839, to 1st October 1841.

Months.	Fever and Febriculæ.		Died.		Febriculæ.		Months.	Fever and Febriculæ.		Died.		Febriculæ.		Total Fever and Febriculæ for both Months.	Recovered.	Died.	Average Mortality.	Mortality per cent.	Number of Patients who took Fever in the Infirmary.			
	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	Male and Female.	Male and Female.	Male and Female.			M.	F.	Died. M.	Died. F.
1839.							1840.															
July,.....	17	24	2	2	1	1	July,.....	44	35	3	4	3	3	120	109	11	1-10 10/11	9·16	...	1	...	...
August,.....	16	23	1	3	1	...	August,.....	27	35	3	9	...	1	101	85	16	1-6 5/16	15·84	...	...	...	...
September,	28	34	2	0	3	...	September,	35	30	3	1	1	4	127	121	6	1-21 1/2	4·72	...	1	...	...
October,....	26	22	4	4	3	...	October,....	37	27	5	3	3	1	112	96	16	1-7	14·28	5	1	2	...
November,	24	42	3	4	1	4	November,	35	42	5	3	...	4	143	128	15	1-9 8/15	10·48	4	3	1	...
December,	31	38	7	7	0	1	December,	53	65	14	9	...	7	187	150	37	1-5 5/37	19·78	1	3	...	1
1840.							1841.															
January,...	39	32	4	1	2	3	January,...	62	93	8	17	3	4	226	196	30	1-7 8/15	13·27	2	1	...	...
February,..	34	34	7	2	8	3	February,..	67	79	6	14	5	11	214	185	29	1-7 1/2	13·55	...	1	...	...
March,.....	27	48	2	3	6	8	March,.....	40	67	9	6	3	7	182	162	20	1-9 1/10	10·98	2	2	1	1
April,.....	30	37	6	6	1	2	April,.....	39	54	5	6	5	3	160	137	23	1-6 23/25	14·57	1	1	...	...
May,.....	47	36	7	5	9	2	May,.....	39	63	7	10	1	3	185	156	29	1-6 1/2 5	15·67	...	...	...	...
June,.....	41	39	7	4	1	6	June,.....	45	55	11	3	1	4	180	155	25	1-7 1/2	13·88	2	...	2	...
Total for 2 years,	360	409	52	41	36	30		523	645	79	85	25	52	1937	1680	257	1-7 1/2 3/37	13·26	17	14	6	2
July,.....	57	69	8	13																		
August,.....	50	43	8	6																		
September,	56	36	6	4																		

Those Patients who took Fever in the Infirmary are included in the numbers admitted monthly.

TABLE II.

Fever Patients from Leith and the country admitted within two years.

	Fever and Febriculæ.							Febriculæ.	
	Total Male and Female.	Total Male.	Cured.	Died.	Total Female.	Cured.	Died.	Male.	Female.
Leith, from 1st July 1839, to 1st July 1840,.....	36	24	20	4	12	10	2	3	2
Leith, from 1st July 1840, to 1st July 1841,.....	118	63	52	11	55	48	7	4	4
Total for two years,.....	154	87	72	15	67	58	9	7	6
The country from 1st July 1839 to 1st July 1840,...	79	60	46	14	19	18	1	2	
The country from 1st July 1840, to 1st July 1841,..	131	96	89	7	35	31	4		2
Total for two years,.....	210	156	135	21	54	49	5	2	2

The patients sent to the Infirmary from the country were almost entirely from the labourers employed in forming railroads.

TABLE III.

Exhibiting the Fever Patients admitted between 1st July 1839 and 1st October 1841, arranged according to their ages, and the average mortality at different ages.

Years of Age.	Total Male and Female Fever and Febriculæ.	Male.						Female Fever and Febriculæ.	Female.				
		Male Fever and Febriculæ.	Cured.	Died.	Average Mortality.	Mortality per cent.	Number of Febriculæ.		Cured.	Died.	Average Mortality.	Mortality per cent.	Febriculæ.
— 5	32	14	14	6	1-1·5	6·66	5	18	18	7	1-14	7·14	1
—10	156	76	70					80	73				
—15	255	124	122	2	1-62	1·61	13	131	126	5	1-26$\frac{1}{5}$	3·81	5
—20	414	174	165	9	1-19$\frac{1}{3}$	5·17	20	240	231	9	1-26$\frac{2}{3}$	3·75	21
—30	644	312	283	29	1-10$\frac{7}{29}$	9·29	15	332	303	29	1-11$\frac{1}{29}$	8·73	23
—40	367	166	129	37	1-4$\frac{8}{37}$	22·28	10	201	164	37	1-5$\frac{1}{37}$	18·4	15
—50	238	111	73	38	1-2$\frac{5}{38}$	34·23	2	127	92	35	1-3$\frac{2}{35}$	27·55	12
—60	94	44	28	16	1-2$\frac{3}{4}$	36·33	2	50	35	17	1-2$\frac{4}{17}$	34·	2
—75	48	25	9	16	1-1$\frac{9}{16}$	64·00		23	13	10	1-2$\frac{7}{16}$	43·47	3
	2248	1046	893	153	1-6$\frac{2}{153}$	14·62	67	1202	1053	149	1-8$\frac{12}{149}$	12·37	82

60 patients, (32 males and 28 females,) included in the above table, were still in the hospital on the 1st October, but were discharged before the table was made up.

As it is often impossible to say, in many cases, whether the patient is labouring under a mild form of continued fever, or under some temporary febrile excitement arising from other causes, these have been separated from the more marked cases of continued fever, and arranged under the head of febriculæ.

Alleged previous duration of disease in fever patients before admission, 7$\frac{1}{2}$ days.
Ditto ditto febriculæ, ditto, . 5 ...
Average residence of fever patients in hospital, . . 26 ...
Ditto febriculæ ditto, ... 8 ...

FEVER AND FEBRICULÆ.

Alleged duration of disease before admission, ... 7 days.
Average residence in hospital, ... 24 ...

The days of admission and dismissal were both included in calculating the average residence in the hospital.

Fever patients admitted from 4th February to 30th September inclusive, whose legal residence was in Edinburgh or Leith, .	576
Fever patients admitted whose legal residence was elsewhere, though resident in Edinburgh, ...	94
Fever patients admitted from various parts of the country, .	101
	771

The first of the preceding tables exhibits a great difference in the average mortality from fever in different months, though there was no decided change in the mode of treatment. In the months of September 1839 and 1840, the average mortality is only 1 in $21\frac{1}{6}$, or 4·72 per cent; while in the months of December of the same years it was as high as $1—5\frac{2}{7}$, or 19·78 per cent. Our total ignorance of the cause of such differences, forcibly points out the small advances which we have hitherto made in our explanations of the source and origin of continued fever. The third table illustrates the very great dissimilarity which exists in the average mortality at different ages. The necessity of keeping such facts as these in view, when judging of the average mortality under different modes of treatment, if we wish to avoid serious sources of fallacy, even in the same epidemic, are so very obvious, that we need not insist upon them.

In drawing any inferences regarding the probable duration of a disease, such as fever, from the length of time that patients remain in hospital, it ought to be kept in mind, that various circumstances, besides the state of the patient's strength, may at times influence his regimen in hospital during convalescence. The more or less crowded state of the wards—the poverty and friendless condition of the patient—the possession of a tolerably comfortable home, &c. &c., all influence the period of the dismissal of the patient. As these circumstances, however, to a certain extent, counteract each other, their being taken into account, compared with those already enumerated, is of less importance.

In another place, (*Edinburgh Medical and Surgical Journal*, Number 141), I gave an analysis of the post-mortem examinations of forty-seven cases of continued fever, which I had made in the Royal Infirmary of Edinburgh, between April 1838 and September 1839. Between the latter date and 1st September 1841, or a space of nearly two years, I have had occasion to inspect 100 additional cases which died of that disease in the same institution. I shall now endeavour to give an analysis of these from the details entered in the register of dissections kept by me in the Infirmary. Among these 100 cases are not included 2, who were seized with and died of pneumonia while recovering from fever. I shall not enter upon an analysis of the symptoms which these cases presented during the course of the malady, as it would not furnish us with a correct view of the cha-

racter of this epidemic. I would willingly have endeavoured to have given an analysis of the symptoms, both of the favourable and unfavourable cases, had I the necessary documents in my possession; but the want of such information is the less to be regretted, as I believe the character of the epidemic to be essentially the same, as when Dr Henderson drew up his excellent numerical analysis of the most important symptoms observed in nearly 200 cases placed under his care.[1] Of these 100 cases, 44 were females and 56 males. In the following table they have been arranged according to their ages.

	Males.	Females.	Total.
From 5 to 20 years,	5	7	12
... 20 ... 30 ...	12	9	21
... 30 ... 40 ...	15	10	25
... 40 ... 50 ...	12	10	22
... 50 ... 60 ...	8	5	13
... 60 ... 70 ...	4	3	7
	56	44	100

	Years.
The average age of the female patients,	$34\frac{3}{4}$
... ... male ditto,	$37\frac{3}{4}$
... ... both male and female,	$36\frac{1}{3}$

	Average Duration of Disease before Admission. Days.	Residence in Hospital. Days.	Total Duration of Disease. Days.
Males,	$7\frac{1}{18}$	$5\frac{2}{11}$	$12\frac{9}{17}$
Females,	$6\frac{4}{11}$	$6\frac{4}{11}$	$13\frac{8}{11}$

Total duration of disease in both males and females before death, $12\frac{4}{5}\frac{9}{3}$, or somewhat more than $12\frac{1}{2}$ days.

The earliest death took place on the 4th day, and the latest on the 23d day.

Of the 56 males, the brain was examined in	47
Of the 44 females, the brain was examined in	35
	82

Head.—In indicating the quantity of serum in the sub-arachnoidean cellular tissue, I have classified the cases under four divisions. In the first, I have placed all those in which the serum was either only sufficient to moisten the parts, or too small in quantity to cause the appearances characterizing the other three classes. In the second division, I have arranged those cases in which the sulci on the surface were wider than what we generally find in the brain of a young individual, and were occupied by serum, but without any very distinct elevation of the arachnoid above the surface of the convolutions. On slicing down the brain in some of these cases, a very considerable amount of serum flowed from the sulci. In the third and fourth divisions, the cases are arranged according to the extent to which the arachnoid was raised above the surface of the convolutions. We have much more precise and accurate

[1] Report on the Epidemic Fever of Edinburgh, &c. &c. Edinburgh Medical and Surgical Journal, No. 141.

methods of ascertaining the quantity of serum present in the lateral ventricles. In every instance, the lateral ventricles were carefully opened, and the fluid, if present in any appreciable quantity, was withdrawn by means of a pipette, and accurately measured in a graduated glass measure.

MALES.

	Numbers.	Average Age.	Youngest Years.	Oldest Years.
Small quantity of serum under the arachnoid,	27	30 3/7	7	56
Sulci more or less wide, and full of serum,	12	48 1/4	35	62
Arachnoid elevated at depending parts,	7	52 2/7	44	67
Ditto ditto at depending and middle parts,	1	66	—	—
	47			
Serum in lateral ventricles less than ʒss	22	33	7	62
... ... between ʒss and ʒi	5	44 3/5	27	57
... ... ʒi ... ʒiss	2	39	35	43
... ... ʒiss ... ʒii	5	43 2/5	25	54
... ... ʒii ... ʒiii	8	44 1/4	17	67
... ... ʒiii ... ʒiv	4	40 1/2	25	49
... ... ʒv ... ʒi	1	66	—	—
	47			

In 7 among the most aged of these cases in which there was less than ʒss of serum in the lateral ventricles, a considerable quantity was found between the sulci. In 2 of the cases where the serum in the lateral ventricles was between ʒss and ʒi, the arachnoid was elevated above the surface of the convolutions at the depending parts. In 4, where the serum was between ʒii and ʒiii, the arachnoid was elevated above the surface of the convolutions at the depending parts; and in 1 of these ʒi, and in another ʒii of the same fluid were collected from them in the cavity of the arachnoid, while the heads were kept in an elevated position.

FEMALES.

	Number.	Average Age.	Youngest Years.	Oldest Years.
Small quantity of serum under arachnoid,	20	27 1/19	12	44
Sulci more or less wide, and full of serum,	12	46 1/4	34	60
Arachnoid elevated at depending parts,	3	60 1/3	53	65
	35			
Serum in lateral ventricles less than ʒss	15	26 1/13	12	40
... ... between ʒss and ʒi	3	27 1/3	15	44
... ... ʒi ... ʒiss	3	44 1/3	35	59
... ... ʒiss ... ʒii	4	43 1/4	37	50
... ... ʒiii ... ʒiv	2	59	58	60
... ... ʒiv ... ʒv	5	54 1/2	45	65
... ... ʒi ... ʒiss	3	38	34	40
	35			

In 3 of the above females in whose lateral ventricles between ʒiv and ʒv of serum were found, the quantity of that fluid be-

neath the arachnoid was sufficient to elevate it considerably above the surface of the convolutions; and in a fourth, ʒii were collected from the cavity of the arachnoid.

In the following table, the two preceding ones are thrown together.

TOTAL MALES AND FEMALES.

	Number.	Average Age.
Small quantity of serum under arachnoid,	47	29$\frac{1}{4}$
Sulci more or less separated, and full of serum,	24	47$\frac{5}{24}$
Arachnoid elevated at depending parts,	10	55$\frac{1}{2}$
Ditto ditto at middle and depending parts,	1	66
	82	
Serum in lateral ventricles less than ʒss,	37	30$\frac{1}{18}$
... ... between ʒss and ʒi	8	38
... ... ʒi ... ʒiss	5	42$\frac{2}{5}$
... ... ʒiss ... ʒii	9	43$\frac{1}{4}$
... ... ʒii ... ʒiii	8	44$\frac{1}{2}$
... ... ʒiii ... ʒiv	6	46$\frac{2}{3}$
... ... ʒiv ... ʒv	5	53$\frac{4}{5}$
... ... ʒv ... ʒiss	4	44$\frac{1}{2}$
	82	

Of the 82 brains examined, 34 are described as presenting a considerable number of red points on the cut surfaces, while in 3, the substance of the brain is stated to have been pale. The condition of the other brains, in regard to the quantity of blood which presented itself on the cut surfaces of the organ, was that which is most usually found in death from other diseases. In one patient, (a female aged 64) a portion of the substance of the anterior part of the right corpus striatum, about the size of a pea, was of a dark red colour, from the quantity of blood which it contained. The coats of the internal carotids were much thickened at several parts from a yellowish deposit. The basilar artery was less diseased. There was also serum under the arachnoid, elevating the membrane at the depending parts, and a considerable quantity of the same fluid flowed from the sulci on slicing the brain: ʒv of serum were also withdrawn from the lateral ventricle. The substance of the brain was of normal consistence. In one male, aged 56, in whose lateral ventricles ʒvi of clear serum were found, there was distinct softening of the inner surface of the ventricles, without any change of colour, and apparently arising from inbibition of the serum. There was an appreciable difference in the consistence of the brain in different cases; but we believe that this, as far as the disease was concerned, was an accidental circumstance, depending upon the age of the individual, the length of time that intervened between death and the inspection, the state of the weather, &c. We feel satisfied that similar differences in the degree of

the consistence of the brain will be as frequently, or nearly as frequently, observed in death from other diseases, where we have no reason to believe that the brain is affected. In my former communication on this subject already referred to, I entered into some details in giving an account of the inspection of the brains of 43 persons who died of fever, with the view of ascertaining if the symptoms observed during life could be elucidated, or explained, by the appearances observed in that organ after death. I endeavoured to show that there was no necessary relation between the extent of the cerebral symptoms during life, and the quantity of serous fluid, or the quantity of blood in the vessels, observed after death. By referring to the history of the cases, we found that very little serous fluid was present within the crania of patients, who, during the course of the disease, had convulsive attacks with insensibility, had much delirium, or who died comatose; while, on the other hand, some of those, within whose crania the largest quantity of serum was found, only presented the usual confusion of thought attending fever. On contrasting the symptoms observed during life, in the whole 125 cases of fever in which I have examined the brain, with the appearances observed after death, I find that the following statements are equally applicable to the whole of the cases as to a part of them:—"We have seen the cerebral derangements as strongly marked in these cases, where no increased quantity of serum was found within the cranium after death, as in these where this was observed. Besides, it must be remembered, that it is not unusual to find an amount of serous fluid within the cranium in old people, or where the patient has been emaciated by previous disease, in quantities equal to what we have described as occurring so frequently in fever." It has also been stated, that in many of the cases "in which the brain was examined, we observed the blood-vessels well loaded with blood, as indicated by the numerous red points which presented themselves on the cut surfaces of the brain. In judging of the degree of vascularity of the brain, we ought to remember, that part of the increased quantity of blood may be merely apparent, and arise from the fluid state of the blood; for it is obvious, that if the blood remain fluid, the pressure of the knife in slicing the brain will force the fluid blood through the open mouths of the vessels upon the cut surfaces." In some of these cases, where the head symptoms were most violent and sudden, the quantity of blood found in the vessels of the brain after death was certainly not above the normal quantity. A girl aged 12 was seized on the twelfth day of fever, with convulsions, insensibility, and foaming at the mouth. Shortly after these symptoms had abated, she was seized with another convulsive fit, during which she died. Two days before death she complained much of frontal headache, for which she was bled to ℥x. On examination of the body after

death, we found that the quantity of serum within the cranium was only sufficient to moisten the surfaces of the brain, and that that organ itself was rather pale, but everywhere of normal consistence. In the earliest case of death, (on the fourth day), the patient, a female aged 16½ years, was admitted on the third day of the disease, and the symptoms were then comparatively mild. When admitted, she had headache and great pain in the loins; face flushed; pulse 100, of good strength; skin hot and dry; bowels costive; tongue coated with a yellowish fur; and she had frequent rigors on the two first days of her illness. She was ordered ʒvi olei ricini, and a sinapism to the loins. On the day after admission the pain of the back was much relieved; a number of large and florid petechiæ had appeared on the chest and back; the other symptoms were as on admission. In the evening, between 5 and 6 o'clock, she appeared to be drowsy; and about half-past 6, the nurse remarked that her breathing was loud, and endeavoured to rouse her, but in vain. When I saw her at 8 o'clock, she was lying on her back in a comatose state; her face was livid, and her breathing noisy; the respirations were 18 in the minute, thoracic, and very imperfectly performed; the petechiæ were livid; the eyes, bloodshot, and the pupils much contracted. The pulse was then of tolerable strength, and not increased in frequency; but it gradually became more feeble as the respiration became less perfect, and she died at half past 8 o'clock P.M. On examining the body after death, very little serum was found within the cranium, and the surfaces of the brain were simply bedewed by it. Every part of the brain appeared normal in colour and consistence, and no great number of red points presented themselves on the cut surfaces. The lungs were moderately congested with blood, and there was a small quantity of frothy serum in the bronchial tubes. The blood in the heart and large vessels was quite fluid; there were some bright red petechial spots below the pleuræ, on the posterior surfaces of both lungs, and a few bright red small petechiæ on the anterior surface of the right ventricle of the heart, and several irregular dark patches at the inner surface of the left ventricle, caused by the effusion of small quantities of blood below the endocardium; old adhesions existed between the anterior surface of the liver and the inner surface of the anterior wall of the abdomen; the liver was larger than usual, firm, friable, and granular, but not much changed from the natural colour, except that small masses of a yellowish colour were scattered through it; the kidneys were healthy, but around the pelvis and infundibula of the right, a quantity of dark coagulated blood was effused into the cellular tissue; there were several petechial spots under the mucous surface of the intestines, more especially about the lower part of the ileum and the caput cœcum; the elliptical patches were not elevated, but some of those at the

lower part of the ileum were densely covered with petechial spots. It is probable that the complication of the purpura hemorrhagica may have been the cause of the early and rapid death in this case.

Even in those cases in which the greatest quantity of serum was present within the cranium, we had no reason to believe that effusion had taken place rapidly, or exercised any injurious pressure upon the substance of the brain, for in none was the dura mater stretched tensely over its surface, the convolutions flattened, or the sulci pressed together. There can be no doubt that the amount of serous fluid within the cranium is much influenced by the age and previous condition of the patient; and our impression is, that its amount in fever cases is not greater, than in death from other diseases in which the brain is not supposed to be implicated; but as we intend, in an early number of THE MONTHLY JOURNAL, to give the result of extensive observations collected on this subject, we shall not at present enter upon it further. On looking at the previous tables, it will be perceived that the average age of the three females, who had the largest quantity of serum in the lateral ventricles, was below that of others in whose brains a smaller quantity was found. The history of these cases, and a consideration of the whole post-mortem appearances, are sufficient to show, that even in these, the presence of the serum could not be the cause of death. One of these was a female, aged 39, who stated that she had been ill for five days previous to admission. When admitted, she complained of headache; had some cough; the skin was hot and dry, with faint spots upon it; and the bowels were confined. The bronchitic symptoms increased, and small mucous *râles* were heard posteriorly on both sides. She died on the 14th day of the disease, and became comatose before death. A small quantity of serum was found under the arachnoid, and there was no increased vascularity of the surface of the brain. The substance of the brain was of good consistence, and the usual number of red points presented themselves on the cut surfaces: there were 3x of pure serum in the lateral ventricles. The septum lucidum was much stretched, very thin, not softened, and was reticulated at the posterior part. The inner surface of the ventricles was not softened, but felt a little firmer than the rest of the brain; it had a more opaque appearance than usual, but was quite smooth. There was no flattening of the convolutions on the surface of the brain; the arteries of the brain were healthy. Now we feel satisfied that the post-mortem appearances indicate that the effusion of the serum had been slow and gradual, and had taken place, or at least was going on at the commencement of the fever, and was in all probability dependent upon a chronic inflammation of the inner surface of the ventricles, totally unconnected with the attack of continued fever.

Another of these cases was a female, aged 34, a widow, who had, previous to the commencement of her illness, suffered many privations. When admitted under my care, she was in the 8th day of fever. The pulse was 120, and soft; the skin was warm, and covered with much eruption; some nausea; little headache; the eyes were suffused; and the bowels slow. She answered questions readily. Symptoms of convalescence showed themselves on the 9th day after admission, that is, on the 17th day of the disease, but she appeared to make very little progress, and on the 24th day of the fever, was much weaker, and vomited some bilious matter. She lay in a drowsy state, but could be readily roused. The eruption on the skin was completely gone. From this time she gradually became weaker, without any local symptom, and died on the 26th day of the disease, in a state of great emaciation. On examination of the brain after death, more serum than usual was found under the arachnoid, and the sulci were somewhat separated from each other: there were ʒix of serum in the lateral ventricles. The brain in every other respect appeared normal. In a third case, the female was 40 years of age. When admitted, she had febrile symptoms of no great severity, and was convalescent, when she was seized with rigors, headache, and increased frequency of pulse. The pulse continued frequent; she had delirium at night, *subsultus tendinum*, and at last a tendency to stupor. The breathing was oppressed, with some mucous *râles* in the chest. The tongue was dry; and the bowels had a tendency to be loose. She died on the 12th day after her relapse. On examination after death, some serous fluid was found under the arachnoid, but not sufficient to elevate that membrane above the surface of the convolutions; there was ʒi of clear serum in the lateral ventricles. No softening of the inner surface of the ventricles was seen, and every part of the substance of the brain appeared to be of normal colour and consistence.

Before closing these details regarding the condition of the brain, we shall shortly state some *accidental* anormal appearances which we observed in that organ after death from fever. In a boy aged 14, admitted in a state of insensibility about the fifth day of the disease, the inner surfaces of the arachnoid adhered *firmly* over the anterior lobes of the brain, and the cineritious substance was there firmer, and adhered more strongly to the pia mater. It was stated by his relatives that he had received a blow on the head when a young boy, and had after this been subject to fits, but that he had had none for four years previous to his admission. It was also stated, that he had become insensible on the third day of the disease. An Irish labourer, aged 24, was admitted in a state of delirium, and, as far as could be ascertained, about the seventh day of the disease. He had been delirious for two days before admis-

sion; and it was necessary to tie him down in the cart in which he was brought from a part of the country twelve miles distant. He died next morning. On removing the dura mater, some adhesions were found between the inner surfaces of the arachnoid, over the upper part of the left anterior lobe of the brain, and on attempting to break them through, a small rounded body about the size of a pea, and of an almost calcareous consistence, was dragged out from a depression in the surface of the brain in which it rested, bringing a small part of the substance of the brain with it. There was no increased redness nor softening of the brain around this morbid deposit. In a male patient, aged 66, there was circumscribed and superficial yellow softening of the cortical structure of the brain around the olfactory bulbs. The arteries of the brain were considerably dilated, but their coats were scarcely thickened, and a calcareous deposit was observed in one place only. In two aged males there was considerable disease of the large arteries within the cranium.

Chest.—The *lungs* were examined in 88 cases. From the result of these, and of the 43 cases which we have already analysed, we feel satisfied that the posterior and middle parts of the lungs are more frequently found loaded with blood and frothy serum, than in death from other diseases in which the lungs are not primarily affected. We have found recent pneumonia more frequently in the present cases than in those we formerly analysed. We may here take the opportunity of stating, that when any local disease was found, if the data would at all justify us in attributing the symptoms to the local affection, we struck it from the list of continued fever. It was not without serious and careful consideration that we retained among those of continued fever the cases in which recent pneumonia was present. We have arranged the cases in which the lungs were examined, as follows:—

	No. of Cases.
Moderately congested with blood at depending parts,	21
Considerably do. do. do.	19
One lung congested considerably, the other moderately,	2
Much congested,	17
So dense at depending parts as not to crepitate when cut,	8
Recent pneumonia,	11
Recent bronchitis to a considerable extent,	4
Recent pleurisy and pericarditis	1
Portion of lung dense from late pneumonia,	3
Late pleurisy,	1
Considerable tubercular deposit,	1
	88

In 5 of these 88 cases, not included among the cases of recent *bronchitis* and recent pneumonia, there was a quantity of mucus

present in the bronchial tubes sufficient to interfere with the function of respiration; and in other 3 there was considerable emphysema of the lungs, with some mucus in the bronchial tubes. Of the 11 cases of recent pneumonia, 2 were males, and 8 females. In one of these, a considerable portion of the right lung was in the condition of grey hepatization, and there was a thin layer of puriform matter on the inner surface of the left pleura. The patient, a male aged 60, had low muttering delirium, dark and dry tongue, and an eruption similar to that observed in cases of continued fever on the skin, while the thoracic symptoms did not bear any proportion to the general symptoms. It is quite possible that this case, notwithstanding the strict resemblance of the typhus fever, may yet have been a case of pneumonia attended with typhoid symptoms. In another case, a female aged 58, the lungs were dark coloured along their posterior edges, and did not crepitate when cut. The cut surfaces yielded, when pressed, much frothy serum, with some puriform matter—the latter apparently from the bronchial tubes. A small abscess, about the size of an almond, surrounded by a portion of the lung in the second stage of pneumonia, was found in the upper and posterior part of the lower lobe of the right lung. Portions of the posterior parts of both lungs were quite dense and granular, but friable, and containing much fluid,—passing into the second stage of pneumonia. In one, to which we shall again have occasion to refer, the pneumonia was produced by the extension of the inflammation of the inner surface of the bronchial tubes. In the other 8 cases, which occurred between the 16th December 1840, and the end of January 1841, or within a period of about six weeks, the appearances observed in the lungs had a general resemblance. There was a greater or less condensation of the posterior parts of the lungs, so that they did not crepitate when cut. The appearance of the cut surfaces differed from the ordinary characters of the second or third stages of acute pneumonia, in being nearly smooth, in being more compressible, or in yielding more when pressed between the fingers, and in being much less easily lacerated. Some portions were, however, less compressible, and presented a mere granular appearance, especially when torn.

In none of these cases was there any pleuritic effusion. In two, a small quantity of puriform matter appearing to flow from the air cells, could be pressed from the cut surfaces. In some cases, as it is difficult to draw a line of demarcation between great condensation of the posterior part of the lungs, depending upon physical causes, and condensation arising from inflammatory action, it will be necessary to call in the aid of the microscope. The case included under *late pleurisy*, was a female, aged 18, who had pain of the right side of the chest for some days before she was seized with symptoms of continued fever. On examination of the body after death, a thin layer of lymph,

dry, and of tolerable consistence, adhered to a part of the inner surface of the right pleura. The frequent congestion of the posterior and middle portions of the lungs with blood and frothy serum, may perhaps be chiefly dependent upon disturbed respiratory movements, upon the enfeebled state of the right side of the heart, and upon the altered condition of the blood. The respiratory movements are very generally increased considerably in frequency, for some time before death, but at the same time they are short, and often appear to be imperfectly performed. If the action of the heart were becoming much enfeebled, the bronchial tubes somewhat obstructed by mucus, and the blood more fluid than usual, the right side of the heart would no longer be able to propel the blood through the lungs, and it would consequently go on accumulating in the depending parts, and the same results follow, as when the respiratory movements are deranged. The bronchial glands presented the same appearances as in death from other diseases.

Heart.—We have already mentioned that there was slight recent pericarditis in one of those cases of typhoid fever, in which perforation of the ileum took place. The other anormal appearances found in this organ were chronic, and though totally unconnected with the origin and nature of the fever, they would, by their presence, bring on, if they did not occasion the fatal termination. In four cases, there was sufficient organic disease of the left side of the heart to interfere with the perfect performance of the functions of the organ.

Abdominal organs.—These were examined in 91 cases. In the first cases examined, I recorded the particular condition of the elliptical patches and solitary glands; in the subsequent cases, I contented myself, when they were perfectly normal, by stating that they were neither reddened nor elevated. By the expression, *not visible to the naked eye*, I mean to express the fact, that the position of the elliptical patches could not be recognized by looking on the inner surface of the intestine, and that it was necessary to hold up the opened intestine between the eye and the light before we could distinguish their outlines. The condition of the elliptical patches and solitary glands is exhibited in the following table.

	Male.	Female.	Total.
Not visible to the naked eye,	3	3	6
Scarcely visible, . .	10	7	17
Distinct, but not defined, .	1	3	4
Defined, . . .	5	3	8
Neither reddened nor elevated,	21	23	44
Elevated, but not ulcerated,	2	4	6
Elevated and ulcerated, .	5	1	6
	47	44	91

In one of those cases included among the *elevated but not ulcerated*, one elliptical patch only was slightly elevated without any increased redness, and there was no enlargement of the mesenteric glands. In other two, the elliptical patches at the lower part of the ileum were elevated without increased redness, and presented on the surface the *barbe rasée* appearance, and in one of the two, some of the mesenteric glands were enlarged from the effects of former disease, for they were either hard or contained cretaceous matter. In another—a girl aged eight years—the elliptical patches in the lower six inches of the ileum were obviously elevated above the surrounding mucous membrane, were somewhat irregular on the surface, but not ulcerated; were of a greyish colour throughout, and their vertical section showed no yellowish or lardacious looking deposit in their interior. The mesenteric glands were slightly enlarged, but not decidedly softened. In a fifth, the elevation of the elliptical patches was apparently dependent upon acute inflammation of the mucous membrane of the ileum. In this case, there were also extensive colonitis, and we shall again have occasion to refer to it. In the sixth,—an Irish labourer, aged 20, and not resident in Edinburgh,—the mucous membrane of the lower part of the ileum, for $5\frac{1}{2}$ feet above the ileo-cœcal valve, was of a deep red colour, and the elliptical patches and the solitary glands were evidently elevated and projected about $\frac{1}{12}$th of an inch beyond the surrounding mucous membrane. Numerous whitish spots were observed on the surface of the elliptical patches, and one on each of several of the solitary glands, but there was no distinct appearances of ulceration. The outer surface of the ileum, at the parts corresponding to the lower elliptical patches, was of a dark colour, from the quantity of blood which the vessels there contained. On making a vertical section of these patches, the morbid part was of a uniform red colour, and could be readily broken down by the nail of the finger. The mesenteric glands were considerably enlarged and much softer than usual.

In 6 cases out of 91, the elliptical patches were elevated and ulcerated, and in 5 of these, the solitary glands were in the same condition. In all the 6, the mesenteric glands were enlarged, and more or less softened. Of these 6 cases, perforation of the lower part of the ileum, producing rapid and fatal peritonitis, occurred in 2. These six cases of ulceration of the elliptical patches may be divided into two distinct classes, into those in which the ulceration begins on the inner surface and gradually extends downwards, the edges of the ulcer do not present a sloughy appearance, and the interior of the enlarged patches contains no lardacious looking deposit; and into those in which the ulceration commences by the detachment of sloughs formed in the interior of the enlarged glands, by the breaking up of a lardacious looking

deposit, upon which the increased size of the elliptical patches and solitary glands depends. To the first of these divisions, 1 only of these 6 cases belongs. This patient was a female, who died about the sixteenth day of the disease. Two irregular ulcers, each about an inch in circumference, were found in the lower part of the ileum, extending down to the muscular coat, and placed in the position of the elliptical patches. A little above the highest of these ulcers, one of the elliptical patches was elevated, very vascular, and had commenced to ulcerate on the surface. On making a vertical section of this patch, its cut edges did not present any lardaceous appearance. The mesenteric glands were very slightly enlarged. The 5 cases belonging to the second division were males, all labourers on the Glasgow railroad, who had been for a short time previous to their illness located in Linlithgow or its neighbourhood, about 17 miles west from Edinburgh, and 4 of them were natives of Ireland. Their average age was 25 years, the youngest was eighteen, and the oldest thirty-five years. The most characteristic case of this description was the following. When admitted, he could give no very distinct history of his illness, and the symptoms of continued fever were complicated with severe bronchitis. He had no diarrhœa during life. *Sectio cadaveris.*—Chest. The inner surfaces of both pleuræ were firmly adherent at the posterior parts. The lower and posterior parts of both lungs felt pretty dense, and this was more marked in the left than in the right lung. On making a section of the dense portion of the lung, a considerable quantity of serum could be readily pressed out, and the cut surfaces presented a mottled appearance, arising from a number of black spots scattered through the tissue of the lungs. These black spots we found on examination to be dense and firm, (portions of pneumonic lung,) following the course of the smaller bronchial tubes. The smaller bronchial tubes distributed in these dense portions of lung were dark-coloured, and very considerably dilated. The tissue of the lungs, in the intervals of these dense portions, contained a considerable quantity of blood and serum, but was spongy. The lower and anterior part of the upper lobe of the left lung presented two large bullæ, and the anterior margins of both lungs were light coloured and of a doughy feel. The heart was normal. The blood was principally fluid, with some dark-coloured soft clots in the right side of the heart.—Abdomen. The mesenteric glands, opposite the caput cæcum and lower part of the ileum, were considerably enlarged and softened. The largest of them was about the size of a large hazel-nut, and they were of a greyish colour tinged with red. On opening the intestines, the elliptical patches and solitary glands extended over the 4½ lower feet of the ileum, and did not include all the elliptical patches placed in that portion of the ileum. At the termination of the ileum, there

was a large irregular elliptical patch, 4½ inches in length and 1¼ inch in breadth at the upper part, while at the lower part it extended round the whole circumference of the intestine. It was very irregular on the surface, consisting of deep excavations with narrow ridges between them, projecting considerably above the level of the surrounding healthy mucous membrane. The height of the ridges above the bottom of the excavations was 3½ lines, and their edges, as well as those of the excavations, were sloughy and deeply tinged with bile. Scattered over the healthy mucous membrane at the sides of this diseased patch, were several small rounded and prominent elevations, of nearly the size of split peas. Some of these were smooth on the surface and entire, while others were beginning to break up in the centre. The excavations in the large patch in some places did not extend through the muscular coat of the intestines, while in others they had penetrated to the peritoneal. The only other elliptical patch diseased was situated one foot and a half from the lower part of the ileum, and was about two inches in length. It presented the same appearance as the larger patch already described, except that the excavations were less deep, and the intervening ridges, broader, and more sloughy. There were several rounded, and very distinctly elevated bodies (solitary glands) scattered over the surface of the mucous membrane, between these two diseased patches. These isolated and rounded masses were at least three times larger than those placed around the large diseased patch. Some of them were completely excavated in the centre, each forming a round narrow ridge, surrounding a deep depression; others had a slough in the centre, while others were entire and smooth on the surface. The mucous membrane above the smaller diseased patch, up to the point where it became quite healthy, presented an appearance similar to that between the two patches. The two uppermost elevations were less distinctly defined on the edges, and less elevated than those lower down, and were quite entire. On cutting through some of those elevations, which had not begun to break up, the cut surfaces were found to be firm, and of a lardacious appearance. Though, on the whole, the disease was more advanced in the lower part of the ileum than higher up, this was certainly not uniform, for some of the elevations were broken up in the form of sloughs, while others placed below them, or nearer the termination of the ileum, were still entire. The mucous membrane in the splenic end of the stomach was very thin and soft. The spleen was rather soft, and weighed ℥ix; the other abdominal viscera were normal. We were not permitted to examine the brain.

In another case, the elliptical patches and solitary glands in the lower part of the ileum, presented appearances very similar to those which we have described in the previous case; and in

addition to this, there was found, in the ascending and transverse colon, numerous small, rounded, isolated, and elevated bodies, the largest equal in size to small peas, very similar in appearance to the diseased solitary glands in the small intestines, and they were also undergoing the same changes. In a third case, the disease of the glands or mucous crypts was confined to the lower three feet of the ileum. In a fourth case, one in which perforation of the ileum took place about three-fourths of an inch above the caput cœcum, some of the higher patches were more diseased than others placed lower down. In this case there was recent pleurisy and pericarditis. In the fifth case, the perforation of the ileum was about two-and-a-half inches above the caput cœcum.

In neither of the two patients who died of pneumonia coming on during convalescence from fever, were any traces of ulceration of the intestines to be observed. Conjoining the present cases with the 41 which I previously analysed, I have altogether examined the intestines in 132 cases of fever, not including 6 cases where the patients died of other diseases when convalescing from fever. Of these 132 cases, ulceration of the elliptical patches, or solitary glands, were found in 8, or 1 in $16\frac{1}{2}$. From the description which I have given of the character of these diseased mucous crypts in my former communication and in this, in 5 only, or 1 in $26\frac{2}{3}$, do the morbid changes correspond with those, which are considered characteristic of the typhoid fever of Paris. In all of these 5 cases, the patients were not resident within several miles of Edinburgh when they were seized with the disease. In two also of those cases where the ulceration of the elliptical patches commenced on the surface, and presented exactly the same appearances as we occasionally find in this tissue, independent of the presence of continued fever, the patients did not belong to Edinburgh, were Irish labourers in search of work, and had not been in Edinburgh before the commencement of their illness. During the whole three years and a half that I conducted the post-mortem examinations in the Edinburgh Infirmary, in no single case did I observe, in any individual who had been seized with fever while residing in Edinburgh, anything resembling the changes described as occurring in the lower part of the ileum in the typhoid fever of Paris. It is worthy of observation, that in other fatal cases of fever sent from Linlithgow and other places along the line of the railroad, no alteration upon the mucous crypts at the lower part of the ileum could be detected. Whether or not the typhoid and typhus fever be identical or different diseases, we shall not venture at present to give an opinion; but if it should turn out that they are specifically the same disease, it would prove an interesting subject of inquiry to endeavour to ascertain, why the typhoid form of the fever should, for several years past, never be found in Edinburgh, while it existed at Linlithgow, Anstruther, and other places in Fifeshire.

In 5 cases, there was extensive acute inflammation of the mucous membrane of the intestines. In one of these, a male, aged 50, the mucous membrane throughout the lower $5\frac{1}{2}$ feet of the ileum was much congested with blood. The elliptical patches were visible, but were neither elevated nor ulcerated. The whole mucous membrane of the large intestines was of a deep red colour; and in many places of the ascending colon there were several dark-coloured patches, caused by the effusion of blood into the submucous cellular tissue. In the sigmoid flexure and rectum, the inner surface of the mucous membrane was roughened, apparently from the effusion of small nodules of lymph. The mesenteric glands were slightly enlarged, but were otherwise normal. He died on the eleventh day of the disease. He had no abdominal distension or diarrhœa; but on the night preceding his death, he passed repeatedly, *per anum*, a considerable quantity of blood. In another case, that of a male aged 39, the mucous membrane of the ileum, throughout an extent of three feet, measuring from the caput cœcum, was of a deep red colour, somewhat roughened, especially in the region of the elliptical patches; and flakes of a greyish adhesive substance, (lymph, or very adhesive mucus,) were scattered over this portion of the mucous surface of the intestine, and were most abundant over the elliptical patches. The elliptical patches were very slightly elevated, and were not ulcerated. The ascending colon, the transverse and upper part of the descending colon, were of a dark colour when viewed externally; and when slit open, the mucous membrane was found thickened, spongy, almost black, from the quantity of dark blood which it contained; and there were several ecchymosed spots on the inner surface of that membrane. The greater part of the caput cœcum, and a small part of the commencement of the ascending colon, were nearly normal. Some discharge of blood *per anum* also occurred in this case, the evening previous to his death. In a third case, the inner surface of the ileum, about five feet above the ileo-cœcal valve, was of a bright red colour, with numerous small elevations thickly set together, of a deeper red than the surrounding surface, and were formed by slight projections of the mucous surface. This condition of the mucous surface extended upwards for $3\frac{1}{2}$ feet, with some small intervals, in which the mucous membrane presented its normal appearance. In a fourth case, the whole mucous surface of the large intestines, and of the inferior three-fourths of the ileum, was in a state of intense inflammation. In the fifth case, the mucous surface of the ascending and transverse colon was in a state of acute inflammation, and there was also Bright's disease of the kidneys. We need not dwell upon other anormal appearances observed in the intestinal canal, as we believe that they had no influence upon the course of the disease. We shall

merely state, that in one, the mucous membrane of the intestine was considerably softer than usual, but there was no change of colour, and no increase in its thickness. In another case, numerous dark-coloured spots, which were round, small, and not elevated, (enlarged follicles) were observed on the inner surface of the commencement of the large intestines. Numerous scattered, small, firm, and grey granules of the size of millet seeds were also adhering to the inner surface of the lower part of the ileum. In 7 of the 91 cases, there were distinct traces of chronic inflammation of the stomach; and we had evidence that some of these had suffered from dyspepsia before being attacked by fever. In 8 of the 91 cases, the kidneys were more or less affected with Bright's disease; and in another, one of the kidneys was completely destroyed, and consisted only of a fibrous sac, filled with a substance not unlike coarse plaster of Paris. The other kidney was however, quite healthy, nearly twice its usual size, and weighed more than nine ounces.

Spleen.—I have weighed the spleen in a considerable number of cases of death from fever; but as there is no organ so liable to variations in size within the standard of health, I shall defer any remarks which I may have on this subject, until I have had time to contrast the average weight with that in individuals dying of other diseases; and in the mean time merely remark, that though, in the greater number of cases, it appeared larger and softer than usual, yet in several it was undoubtedly neither.

Condition of the blood.—In 61 cases, the condition of the blood was specially noticed. In 28 cases, it was fluid in the large vessels, and in the cavities of the heart. In 9 cases, some small dark and soft clots were found in the right side of the heart, but the blood was generally fluid. In 22 cases, dark and decolorized soft clots were intermingled with the fluid blood in the heart. In 2 cases there were many decolorized clots in the cavities of the heart.

ARTICLE II.—*Medico-Statistical Report for the Year* 1841, *of the Edinburgh New Town Dispensary. Communicated by* R. OMOND, M.D. Edin., F.R.C.S.E., *Medical Secretary of the Dispensary; and* A. DOUGLAS MACLAGAN, M.D. Edin., F.R.C.S.E., *Lecturer on Materia Medica.*

(Read before the Med.-Chirurg. Society of Edinburgh, June 1, 1842.*)*

The entire number of individuals who have received the benefit of this institution in one or more of its branches during the past year, amounts to 6697. Of these, 2651 applied in person,

while 3635 were visited in their own dwellings, the remainder consisting of midwifery cases and of children vaccinated.

In a report for the year 1840, already published in this Journal,[1] we stated the plan of preparing the registers of disease, along with various other details of dispensary management. While now presenting another report for 1841, it is unnecessary to repeat any thing that was last year stated regarding the description of the ordinarily prevailing diseases. Our present purpose is more limited. We dwell principally on the points of difference of the two years; at least, while stating the general returns of all the cases treated during 1841, we give comment only on those results which may be regarded as less common, or in some degree deserving of peculiar notice. And while the information to be derived from comparing together the increase or diminution of particular diseases during the limited period of two years is not great, it will be at once seen, that by continuing the same plan for a series of years, there will gradually accumulate an amount of facts, capable of being turned to really practical account.

The following tables describe all the medical and surgical cases. The first gives a monthly register of the diseases of those patients who came in person to the institution. The second gives both the diseases and the ascertained results of the cases visited at home.

TABLE

OF

2651 PATIENTS WHO APPLIED AT THE DISPENSARY DURING 1841.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	During 1841.
General Diseases,.....	31	23	28	22	25	20	30	17	34	13	18	14	275
Diseases of Skin,.....	25	22	33	40	33	25	43	43	21	20	8	23	336
Ditto of Brain, &c.,..	11	16	16	9	21	22	17	13	16	16	7	12	176
Ditto of Chest,...	38	48	55	43	29	29	31	43	30	21	32	24	423
Ditto of Abdomen,...	46	48	61	64	61	72	60	76	72	46	33	45	684
Ditto of Urinary Organs,.....	14	10	13	10	5	4	8	8	13	6	8	3	102
Ditto of Uterus,.....	8	3	3	7	3	4	4	14	2	4	4	0	56
Injuries of Locomotive Organs,.....	57	30	55	36	33	30	39	41	35	32	22	26	436
Anomalous Cases,.....	5	1	17	8	2	4	8	12	31	16	38	21	163
Number in each Month,	235	201	281	239	212	210	240	267	254	174	170	168	

[1] In London & Edinburgh Monthly Journal for May 1841.

DISEASES AND RESULTS OF 3635 CASES,

VISITED IN THEIR OWN HOUSES DURING 1841.

		Cured.	Relieved.	Sent to Hospital.	Irregular.	Died.	Event unknown.	Total.
Febrile and General Diseases, 920 Cases.	Febricula	165	...	...	1	...	2	168
	Typhus	220	...	126	1	17	28	392
	Febris Infantum Remittens	24	...	...	...	1	1	26
	Febris Intermittens	2	...	...	...	...	...	2
	Scarlatina	51	...	1	...	8	2	62
	Variola	5	...	...	...	1	...	6
	Varicella	1	...	...	...	...	...	1
	Rubeola	9	...	...	...	...	...	9
	Erysipelas	35	...	1	2	...	4	42
	Plethora	1	...	...	...	...	...	1
	Hydrops	14	12	1	...	6	7	40
	Gangrena Senilis	...	...	...	...	1	...	1
	Rheumatismus	100	37	3	3	...	8	151
	Scrofula	...	8	...	...	...	...	8
	Cancer	1	2	...	...	3	...	6
	Marasmus et Tabes Mesenterica	3	5	1	...	2	...	11
Cutaneous Diseases, 99 Cases.	Morbi Cutis Varii	78	17	...	2	...	2	99
Diseases of Brain and Nervous System, 191 Cases.	Convulsio	...	...	...	...	1	...	1
	Vertigo	4	1	...	...	...	...	5
	Morbus Cerebri	...	1	...	...	...	1	2
	Delirium Tremens	4	...	1	...	2	...	7
	Arachnitis	2	...	...	...	3	...	5
	Apoplexia	3	...	...	...	...	...	3
	Paralysis	1	14	...	...	1	...	16
	Cephalalgia	31	1	...	...	...	2	34
	Dementia	...	2	...	...	...	1	3
	Hydrocephalus	1	3	...	...	9	2	15
	Concussio	2	...	...	...	...	...	2
	Epilepsia	5	2	...	...	1	...	8
	Chorea	...	1	...	...	...	...	1
	Hysteria	13	7	1	1	...	...	22
	Neuralgia	4	1	...	...	...	...	5
	Ophthalmia et Morbi Oculi	46	3	...	...	...	4	53
	Morbi Auris	6	1	...	...	...	2	9

		Cured.	Relieved.	Sent to Hospital.	Irregular.	Died.	Event unknown.	Total.
Diseases of Pulmonary and Circulating Systems, 717 Cases.	Asthma	5	30	...	1	...	3	39
	Catarrhus et Bronchitis	339	48	4	4	9	16	420
	Cynanche trachealis	5	...	...	...	3	1	9
	Pneumonia, Pleuritis, &c.	51	4	1	2	7	4	69
	Hydrothorax	1	1	...	...	...	...	2
	Pertussis	24	1	...	...	1	1	27
	Phthisis Pulmonalis	...	27	2	...	18	7	54
	Hemoptysis	6	5	...	1	1	1	14
	Pleurodynia	41	...	...	...	...	1	42
	Morbi Cordis	...	22	1	...	3	2	28
	Pericarditis	1	2	...	...	1	...	4
	Arteritis	1	...	...	...	...	...	1
	Epistaxis	3	...	...	...	...	...	3
	Varix	...	2	...	...	...	...	2
	Aneurisma	...	2	...	...	1	...	3
Diseases of Digestive System, 678 Cases.	Aphthae	2	...	...	...	...	...	2
	Dentitio	33	1	...	...	...	2	36
	Odontalgia	4	...	...	...	...	...	4
	Cynanche tonsillaris	62	2	...	...	...	...	64
	— parotidea	1	...	...	...	...	..	1
	Cancer Pylori	...	...	...	...	1	...	1
	Perforatio Ilii	...	...	...	...	1	...	1
	Tympanitis	...	1	...	...	...	...	1
	Dyspepsia	125	57	1	1	...	8	192
	Hematemesis	4	1	...	...	...	...	5
	Icterus	4	1	...	...	...	...	5
	Constipatio	70	1	...	...	...	...	71
	Colica	15	1	...	...	...	...	16
	Cholera	1	...	...	...	...	...	1
	Diarrhœa	146	1	2	1	5	3	158
	Peritonitis, Enteritis	24	3	...	...	4	2	33
	Hepatitis	...	...	...	...	2	1	3
	Vermes	59	1	...	2	...	...	62
	Hemorrhoides	13	5	...	...	...	...	18
	Hernia	2	2	...	...	...	...	4
Diseases of Urinary System, 99 Cases.	Nephritis	...	...	...	...	1	1	2
	Morbus Renalis	1	1	...	...	1	1	4
	Morbus Vesicæ	4	3	1	...	...	...	8
	Orchitis	17	...	...	2	...	...	19
	Diabetes	...	2	...	...	...	...	2
	Calculus	...	1	...	...	1	...	2
	Syphilis	28	8	3	1	1	4	45
	Gonorrhœa	13	2	...	...	...	2	17
Diseases of Uterus, 117 Cases.	Amenorrhœa	33	22	...	1	...	2	58
	Menorrhagia	13	2	...	1	...	...	16
	Leucorrhœa	6	13	...	...	...	...	19
	Hysteritis	1	...	...	...	...	...	1
	Morbus Uteri	2	9	1	...	1	...	13
	Gestatio	9	1	...	...	...	...	10

DISEASES AND RESULTS OF 3635 CASES,

VISITED IN THEIR OWN HOUSES DURING 1841.

		Cured.	Relieved.	Sent to Hospital.	Irregular.	Died.	Event unknown.	Total.
Febrile and General Diseases, 936 Cases.	Febricula	165	...	...	1	...	2	168
	Typhus	220	...	126	1	17	28	392
	Febris Infantum Remittens	24	...	...	...	1	1	26
	Febris Intermittens	2	...	...	...	...	...	2
	Scarlatina	51	...	1	...	8	2	62
	Variola	5	...	...	...	1	...	6
	Varicella	1	...	...	...	...	...	1
	Rubeola	9	...	...	...	...	...	9
	Erysipelas	35	...	1	2	...	4	42
	Plethora	1	...	...	...	...	...	1
	Hydrops	14	12	1	...	6	7	40
	Gangrena Senilis	...	...	...	...	1	...	1
	Rheumatismus	100	37	3	3	...	8	151
	Scrofula	...	8	...	...	...	...	8
	Cancer	1	2	...	...	3	...	6
	Marasmus et Tabes Mesenterica	3	5	1	...	2	...	11
Cutaneous Diseases, 99 Cases.	Morbi Cutis Varii	78	17	...	2	...	2	99
Diseases of Brain and Nervous System, 191 Cases.	Convulsio	...	...	...	...	1	...	1
	Vertigo	4	1	...	...	...	...	5
	Morbus Cerebri	...	1	...	...	...	1	2
	Delirium Tremens	4	...	1	...	2	...	7
	Arachnitis	2	...	...	...	3	...	5
	Apoplexia	3	...	...	...	...	...	3
	Paralysis	1	14	...	...	1	...	16
	Cephalalgia	31	1	...	...	...	2	34
	Dementia	...	2	...	...	...	1	3
	Hydrocephalus	1	3	...	...	9	2	15
	Concussio	2	...	...	...	...	...	2
	Epilepsia	5	2	...	...	1	...	8
	Chorea	...	1	...	...	...	...	1
	Hysteria	13	7	1	1	...	...	22
	Neuralgia	4	1	...	...	...	...	5
	Ophthalmia et Morbi Oculi	46	3	...	...	...	4	53
	Morbi Auris	6	1	...	...	...	2	9

		Cured.	Relieved.	Sent to Hospital.	Irregular.	Died.	Event unknown.	Total.
Diseases of Pulmonary and Circulating Systems, 717 Cases.	Asthma	5	30	...	1	...	3	39
	Catarrhus et Bronchitis	339	48	4	4	9	16	420
	Cynanche trachealis	5	...	...	...	3	1	9
	Pneumonia, Pleuritis, &c.	51	4	1	2	7	4	69
	Hydrothorax	1	1	...	...	...	...	2
	Pertussis	24	1	...	...	1	1	27
	Phthisis Pulmonalis	...	27	2	...	18	7	54
	Hemoptysis	6	5	...	1	1	1	14
	Pleurodynia	41	...	...	...	...	1	42
	Morbi Cordis	...	22	1	...	3	2	28
	Pericarditis	1	2	...	...	1	...	4
	Arteritis	1	...	...	...	...	...	1
	Epistaxis	3	...	...	...	...	...	3
	Varix	...	2	...	...	...	...	2
	Aneurisma	...	2	...	...	1	...	3
Diseases of Digestive System, 678 Cases.	Aphthae	2	...	...	...	...	...	2
	Dentitio	33	1	...	...	...	2	36
	Odontalgia	4	...	...	...	...	...	4
	Cynanche tonsillaris	62	2	...	...	...	...	64
	— parotidea	1	...	...	...	...	..	1
	Cancer Pylori	...	...	...	...	1	...	1
	Perforatio Ilii	...	...	...	...	1	...	1
	Tympanitis	...	1	...	...	...	...	1
	Dyspepsia	125	57	1	1	...	8	192
	Hematemesis	4	1	...	...	...	...	5
	Icterus	4	1	...	...	...	...	5
	Constipatio	70	1	...	...	...	...	71
	Colica	15	1	...	...	...	...	16
	Cholera	1	...	...	...	...	...	1
	Diarrhœa	146	1	2	1	5	3	158
	Peritonitis, Enteritis	24	3	...	...	4	2	33
	Hepatitis	...	...	...	...	2	1	3
	Vermes	59	1	...	2	...	...	62
	Hemorrhoides	13	5	...	...	...	...	18
	Hernia	2	2	...	...	...	...	4
Diseases of Urinary System, 99 Cases.	Nephritis	...	...	...	...	1	1	2
	Morbus Renalis	1	1	...	...	1	1	4
	Morbus Vesicæ	4	3	1	...	...	...	8
	Orchitis	17	...	...	2	...	...	19
	Diabetes	...	2	...	...	...	...	2
	Calculus	...	1	...	...	1	...	2
	Syphilis	28	8	3	1	1	4	45
	Gonorrhœa	13	2	...	...	...	2	17
Diseases of Uterus, 117 Cases.	Amenorrhœa	33	22	...	1	...	2	58
	Menorrhagia	13	2	...	1	...	...	16
	Leucorrhœa	6	13	...	...	...	...	19
	Hysteritis	1	...	...	...	...	...	1
	Morbus Uteri	2	9	1	...	1	...	13
	Gestatio	9	1	...	...	...	...	10

		Cured.	Relieved.	Sent to Hospital.	Irregular.	Died.	Event unknown.	Total.
Injuries and Diseases of Locomotive Organs, 401 Cases.	Morbi Ossium et Articulorum	13	14	1	1	1	2	32
	Fractura	15	...	3	...	...	...	18
	Contusio	88	5	2	1	1	1	98
	Luxatio	1	...	...	...	...	...	1
	Subluxatio	25	...	...	...	...	1	26
	Periostitis	...	2	...	...	...	...	2
	Inflammatio Bursæ	2	...	...	...	...	...	2
	Talipes	1	...	...	...	...	...	1
	Vulnus	11	1	...	...	...	...	12
	Ustio	31	1	1	...	...	1	34
	Abscessus	58	5	...	4	...	8	75
	Ulcus	55	28	4	2	...	2	91
	Anthrax, Furunculus	6	1	...	...	...	...	7
	Paronychia	1	...	...	...	...	...	1
	Pernio	1	...	...	...	...	...	1
Anomalous Cases.		...	...	...	...	...	...	407

Of the cases visited at home, 119 have proved fatal,—being one death among 26 patients,—or, stating the fact correctly, the mortality is 3·69 per cent. during 1841, while it was 3·28 during 1840.

And here, along with this increased per centage, we observe the striking contrast which exists between the most severe diseases of the two years.

Those most fatal during 1841, are very much the special diseases, which the general practitioner would calculate on, as possessing that character. These are, beginning with the most fatal,

1. Pulmonary consumption,
2. Typhus fever,
3. Inflammatory chest attacks,
4. Hydrocephalus,
5. Scarlet fever.

While, on the other hand, the register for 1840, exhibits the following list, beginning also with the most fatal,—

1. Small pox,
2. Hooping cough,
3. Typhus,
4. Hydrocephalus,
5. Inflammatory chest affections,
6. Pulmonary consumption,
7. Scarlet fever.

There is considerable difference between the particular diseases which cause the greatest number of deaths in Edinburgh, compared with other places. Taking, as an example, the London bills of mortality for the years 1840 and 1841, and dividing these two years into eight periods of three months each, it is found that consumption is invariably the most fatal disease during each of the above periods. Pneumonia holds the second place in fatality during six periods; and what is termed convulsions occupies the

second place during two periods, and the third during five. Then comes hooping-cough, holding the third place during two periods, and the fourth in one. Next is scarlet fever, holding the third place during one period, and the fourth during two. And, last of all, hydrocephalus occupies the fourth place during three periods, and small-pox holds the same position during one.

Of febrile complaints there are, in the first place, 168 cases marked as febricula, because of short duration, and unattended by severity of symptoms. There are also 26 cases of remittent fever, occurring among children. There have been just two cases of intermittent, showing regular periodical symptoms, and both successfully treated by quinine. The diminution of variola during 1841, is remarkable when contrasted with the preceding year. Only six cases have occurred, one of which was fatal.[1] On the whole, epidemic diseases have not been general. Scarlatina occupies the highest place, though of it only 62 cases have occurred, while, of hooping-cough and measles, the numbers are inconsiderable.

Typhus fever, however, has been general. At no period of the year, it is true, has it prevailed to a very great extent, but as cases have occurred during each month, the amount of all is greater than during 1840, an unexpected result, though in accordance with the experience of other institutions, including the Royal Infirmary, where the number exceeded that of the preceding year by 590.

On comparing together the proportion of fever cases during the two past years, it is found that 6 per cent. of all the patients during 1840 were typhus; while, during 1841, the per centage rises above 10.

During 1840, 75 cases were sent by the medical officers to the Royal Infirmary, and during 1841, they have sent 126.

The general result of the fever cases treated in their own houses during 1840, is one fatal case to 12 recoveries; while, during 1841, it is found to be 1 to 13. That is, the more general prevalence of fever during 1841 is attended by a diminished mortality. In this respect, the observations made here do not differ much from those made in other cities on a more extended scale. Thus, in Glasgow, during the five years ending 1839, the average deaths from typhus, drawn from the results of about 55,000 cases, were 1 in 13,—the several years being as follows:—

During	1839,	1 fatal case	in 15.
—	1838,	1 —	in 12.
—	1837,	1 —	in 10.
—	1836,	1 —	in 12.
—	1835,	1 —	in 15.

[1] Since the commencement of 1842, this loathsome complaint has appeared in several parts of the city.

The locality of fever in Edinburgh has been carefully ascertained during the past year. In the Old Town, as compared with the New, and taking Princes Street as the division, there have been 68 per cent. of cases in the Old Town, and 32 per cent. in the New, being exactly the same proportions as occurred during 1840. By adopting another division of the city, there is, however, a difference in the annual results. Dividing the whole town into three districts, by two lines drawn from north to south, one through Dundas Street, Hanover Street, the Mound, and George the Fourth Bridge; the other by Broughton Street, Leith Wynd, and St Mary's Wynd, it appears that, in the eastern of these divisions,

42 per cent. of the fever cases occurred in 1840, and
33 per cent. in 1841.

In the Central Division,
39 per cent. occurred in 1840, and
43 per cent. in 1841.

And, in the West Division,
19 per cent. occurred in 1840, and
24 per cent. during 1841.

—the eastern part of the city, particularly Greenside and the Canongate neighbourhood, thus affording the greatest number of cases during 1840, while the Cowgate and adjoining closes have been, during 1841, by far the most prolific locality.

The only other class of facts to be mentioned, is connected with the general prevalence of fever in Edinburgh during the last five years. It is of some interest to observe the rise and fall of typhus here, and make comparison with records in other places. Going back as far as 1837, we find the commencement of that year marked by an epidemic influenza of extreme severity, but it is the month of September before fevers of typhoid type make their appearance. The year 1838 commenced with a high number of cases, there being a gradual diminution till the months of August and September, when a very sudden increase took place. During October 1838, more cases occurred than during any month before or since. The end of 1838, and the commencement of 1839, may be regarded as the period, during the last five years, when typhus prevailed with the greatest severity, as well as to the greatest extent, the cases which occurred towards the termination of 1839 being of less severe type. The details regarding 1840 and 1841 have been already given, and from what has been observed during the present year, there is every reason to anticipate that a general abatement is now taking place in the prevalence of fever.

Article III.—*On the Signs of Delivery.* *By* R. Turner, Esq., *Surgeon, Keith.*

"Doctors will differ, but medical jurists cannot differ," is the remark of a distinguished Professor of forensic medicine.[1] If well founded, it will oblige us to restrict the designation of "medical jurist" within very narrow limits,—to exclude from the category some of the greatest names in medical literature; for, assuredly, it requires but slight research to discover a *questio vexata* among writers of eminence on this branch of the science. It is, however, highly desirable that medical jurists should be at one, wherever uniformity of sentiment is attainable; for inaccuracy of judgment is, if possible, more disastrous here, than in any other department of medical science. In the ordinary exercise of our profession, an erroneous theory may, by a lucky chance, lead to a harmless, or even to a not inappropriate plan of treatment; or Dame Nature, whose generosity is, at least, as often experienced as acknowledged, may successfully resist any unwitting infringement on her laws; but the medical jurist is subject to no such controlling influence:—his dictum, for good or for evil, is absolute.

Surely, then, we might expect that the cultivators of this important branch of medical science should exercise the greatest possible circumspection, both in receiving facts and drawing inferences. But how different is the actual state of matters! In this field of inquiry, examples are to be met with in which the medical philosopher appears as if deserted by the spirit which guided his researches in other paths. Although noted for his candour, caution, and the closeness of his reasoning there, we shall here find him generalizing from a few isolated observations, controverting established doctrines, based on an ample body of well-ascertained facts, without himself adducing a single fact in support of his own views, heaping up vexatious difficulties in the way of others, till the very celebrity he has before acquired becomes almost matter of regret, on account of the weight it lends to his opinions now. Not satisfied with "gathering shells by the shores of the great ocean of truth," he must also determine beforehand the particular sort he is to find, such as do not tally exactly with his preconceived notions being left rejected. In short, dogmatic assertion, and special pleading, have here frequently usurped the place of patient, unbiassed investigation; and not a little of the ingenuity displayed has been directed to making "the worse appear the better reason."

[1] Dr Gordon Smith, in The Lancet, 1829.

To those acquainted with the past and present state of medical opinion, as bearing on the question of *infanticide*, the above will not appear an exaggerated picture; and the collateral topics,—*concealed pregnancy*, and *concealed delivery*, also furnish some striking examples in point. It is the last named subject to which I would at present call attention.

Of the different *signs of delivery* enumerated by authors, there is not one, against the validity of which an objection has not been urged; whilst our cumulative evidence afforded by all of them combined, has been shaken by the statements of the very highest authorities.

Let us, in support of this assertion, briefly review the various signs held to denote the occurrence of delivery, with the opinions of some of the best writers regarding them.

Enlargement and relaxation of the external parts, may take place "from simple menstruation."[1] "The soft parts are frequently as much relaxed from menstruation as from delivery."[2]

Dilatation of the vagina may arise from the causes just mentioned, as well as from the passage of hydatids and moles.[3] This last source of error will be more particularly noticed afterwards.

The lochial discharge, according to Beck, is a conclusive indication. "Attending this discharge there is an odour so peculiar, that it can always be recognised by those at all conversant with it, *and which is not present in any other discharge from the uterine organs*."[4] Dr Ryan, on the contrary, asserts,[5] that a discharge precisely similar "may be present after the expulsion of a mole or other morbid growth in the uterus;" and this also appears to be the opinion of Dr Burns.[6]

Obliteration of the cervix and dilatation of the os uteri, may be the consequence of hydatids or moles.[7]

Enlargement of mammæ and secretion of milk, "may take place independently of pregnancy;"[8]—"may arise from other causes than pregnancy or delivery."[9] "In some cases milk is secreted after hydatids are expelled."[10] See also Male,[11] Denman,[12] &c. On the other hand, Dr J. Mason Good affirms that in the case of uterine hydatids or moles, "the breasts are flat and do not participate in the action."[13] "The breasts will be flaccid," says Dr Ryan;[14] and S. Cooper[15] expresses a similar opinion.

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[1] Beck, Elements of Medical Jurisprudence, 6th ed., p. 221.
[2] Ibid. op. cit., p. 154.
[3] Beck, *u. s.*
[4] Op. cit., p. 219.
[5] Manual of Midwifery, p. 212.
[6] Principles of Midwifery, 8th ed., c. xxv., *passim*.
[7] Beck, Burns, Ryan.
[8] Burns, p. 591.
[9] Beck, p. 221.
[10] Burns, p. 124.
[11] Juridical Medicine.
[12] Midwifery.
[13] Study of Medicine, vol. iv., p. 261.
[14] Manual, p. 298.
[15] Surgical Dictionary, Art. *Polypus Uteri*.

Dr Blundell found the secretion of milk abundant in a woman who was not pregnant at the time, had not been so for three years, and had not suckled for some time previously. He also relates the case of a negress who secreted milk for twenty years after her pregnancy.[1]

Grandmothers have suckled their grandchildren. Females who have never been pregnant have secreted milk in consequence of friction, suction, &c. having been applied to the mammæ. And even men have suckled children. A host of authorities are cited for these facts by Beck.[2]

Foderè asserts that "*immediately after the cessation of the menses* milk is often secreted."[3]

The areola around the nipple is also pronounced an inconclusive sign. "Swarthy women," says the late Professor Hamilton, "have naturally, in the virgin state, a mahogany-coloured areola."[4] The appearance in question is sometimes wanting during pregnancy. In other cases it remains after a first pregnancy during life.[5] Dr Stark, however, believes that its appearance during gestation is, in general, distinguishable from that in other circumstances.[6]

The lineæ albicantes "will often remain for life, and hence should not be depended upon in cases where females have had several children." "They are sometimes wanting in females who have had children;" and "Dr Montgomery saw them very marked in a male labouring under general dropsy."[7]

Enlargement of the uterus may arise from hydatids or moles, so as to lead to the conclusion that delivery had taken place.[8]

A case of chronic peritonitis, with extensive visceral disease, lately occurred in the practice of Dr Boyd of London, the autopsy of which disclosed, amongst other appearances, the following; and, although not expressly stated as an argument against the conclusiveness of the sign of delivery under review, their tendency as such is obvious:—"The uterus was enlarged as much as it would have been a week after delivery (she had never borne children.) . . . . Near the fundus was a tumour about the size of an orange," &c.[9]

Relaxation of the abdomen, resembling that from delivery, may follow the discharge of the fluid in ascites;[10] or the expulsion of moles or hydatids.[11] The force of this last objection is also ac-

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[1] Midwifery, p. 112.
[2] P. 121.
[3] Traité de Médecine-Légale, tom. i., p. 440.
[4] Practical Observations, &c., 2d ed.
[5] Gooch, Dewees, White, Blundell, Montgomery, Beck.
[6] *Vide* his article "On the Signs of Pregnancy," &c., in the Edinburgh Medical and Surgical Journal, for January 1842.
[7] Beck, p. 155.
[8] Burns, Beck, Male, Ryan, &c.
[9] Edinburgh Medical and Surgical Journal, for April 1842.
[10] Beck.
[11] Ryan.

knowledged by Dr Burns, who, however, adds, "Yet it is rare for the belly to be so much enlarged as in the end of pregnancy."[1]

The question of how far the evidence derivable from all these indications combined, may be relied on, falls now to be considered. It were difficult to name two whose talent, industry, and experience, entitle their opinions to greater deference than those of Drs Burns and Blundell. Let us, then, inquire to what conclusions their evidence on this head will lead. The former, after detailing the signs of delivery, adds,—"A question here occurs, May not all these appearances take place merely from hydatids? I reply that although hydatids may produce, to a certain degree, the same effects with gestation, because they generally spring from conception, yet it is very rare for the belly to be so much enlarged as in the end of pregnancy, and when the mass is expelled, as it is soft, *the perineum cannot be injured.* If, then, it can, in a criminal case, be proved that the woman had the belly greatly enlarged, and if, afterwards, she be found with the breasts containing milk, the uterus large, and its mouth soft and open, *and part of the perineum or the fourchette torn*, there can be no doubt that she has borne a child."

Regarding this last indication, Dr Blundell makes the following remarks:—"With the birth of the first child the commissure is generally torn through, and the fossa navicularis with it, *though not always*, so that the existence of these facts is no disproof of previous childbirth; and I remember a case in which, though I had delivered the patient, not without difficulty, with the forceps, the commissure and fossa existed afterwards in all their perfection."[2]

The united testimony, therefore, of these eminent practitioners warrants the following inferences:—1st, Every sign of delivery, with one exception, may be simulated by the appearances following the expulsion of uterine hydatids. 2dly, This exclusively characteristic mark is present only after delivery for the first time; and, 3dly, Not always then.

For the sake of perspicuity, I have avoided noticing the arguments *for* the validity of these signs, whilst stating the objections to them. All that has been advanced on the first head, may be summed up in small space; it is, indeed, comprised in the subjoined passage from the admirable essay of Dr J. B. Beck, so often referred to in the preceding pages:—

"In relation to the foregoing signs, it is essential to recollect that all of them have been objected to as uncertain, inasmuch as almost every one of them may be produced by other causes than delivery. * * * Now, it must be admitted, that all these objections are, to a certain extent, well founded; and they go to show

[1] Midwifery, p. 591.

[2] Lancet, N. S., vol. iv., p. 641.

that no one sign, taken by itself, ought to be considered sufficient to establish the fact. In all cases, *a number of the signs* should concur before any satisfactory conclusion can be formed. If this general caution be observed, the force of all the preceding objections will be materially weakened. Thus, for instance, *menstruation* may relax the vagina, and external parts, at the same time that it causes a discharge from these organs. In this case, however, all the other signs will be absent; the peculiar odour of the lochia will be wanting (?) There will be no dilatation of the os uteri,—no enlargement of the uterus—no wrinkling of the abdominal parietes—no areola around the nipples—and *no secretion of milk*"—*Adhuc sub judice lis est;* the opinion of Foderè, already adverted to, clashing with Dr Beck's. It is true that the former does not say that milk is secreted, till "*immediately after*" the cessation of the menses; but this consideration does not invalidate the objection to Dr Beck's position, derived from the assertion of Foderè; for we cannot suppose that the state of the vagina and vulva described, will disappear immediately on the cessation of the catamenia.

"Again," proceeds Dr Beck, "*dropsy* may cause a great relaxation and wrinkling of the abdomen. I say *may*, because generally speaking, unless the dropsical fluid be suddenly removed by tapping, this will not happen, as, in ordinary cases, the fluid is removed so gradually, that the abdomen has time to contract and accommodate itself to the change. Admitting, however, that these signs of pregnancy may be counterfeited by dropsy, so many others will be absent as to leave no doubt in the case. The vagina and external parts will not be affected; the os uteri will not be dilated; the uterus will not be enlarged; the breasts will have undergone no change; and there will be no lochial discharge. With regard to the *secretion of milk* from other causes than pregnancy, this is a fact which cannot be denied. But in cases of this sort so many of the other signs of delivery will be absent as to obviate any difficulty that may arise.

"As to the objections founded on the existence of hydatids, it must be confessed, that much more difficulty attends a correct decision."[1]

Whether this difficulty be wholly inseparable from the subject, or whether it has been examined with sufficient care may, it is believed, be fairly questioned. The generally received opinion that most of the usual signs of delivery are present after the expulsion of hydatids, or moles, has not, we have seen, escaped controversy; but on neither side are *facts* appealed to, and we are thus left in ignorance as to whether the conflicting assertions are founded on actual observation, or are merely the fruits of theo-

[1] Elements, pp. 221, 222.

retical reasoning. Admitting the possibility of both views being derived from the experience of their respective advocates, we are still unable to decide which is the rule, and which the exception; or, in fact, whether the one be of so much greater frequency than the other, as that such a relation subsist between the two at all. Accurate and sufficiently extensive investigation could not fail to remove these sources of uncertainty, and thereby enable us to form a more correct estimate than the present state of our knowledge allows, of what weight is due to the chief objection urged against the proof of delivery afforded by examination of the suspected female.

My own opportunities of observing the appearances following the expulsion of hydatids from the uterus, have been too limited to contribute, in any great degree, to the removal of the incertitude complained of; only two cases of this description having come under my notice. A brief detail of these, however, may not be unacceptable.

A middle-aged woman, of a plethoric habit, unmarried, but who had borne two children, and was, as she believed, again pregnant, was seized with slight pains in the loins and abdomen, with a sanguineous discharge from the uterus. Apprehensive lest, in the event of abortion taking place, suspicion should attach to her of having used means to procure it, she made known her condition to the kirk-session of her parish, and afterwards consulted me. When I saw her, the pains had ceased, and the discharge was very trifling. She considered herself in the fifth month of gestation, although the size of the abdomen appeared to the eye—for a manual examination was not judged necessary—to indicate a more advanced period.

A slight discharge from the uterus had occurred, about five months before, but disappeared within twenty-four hours. The patient regarded this as her last menstruation, but, with this exception, the secretion had been absent for eight months. As there was considerable excitement, with fulness of pulse, blood was abstracted from the arm; an opiate and rest in the recumbent posture were ordered, and the symptoms disappeared. In a fortnight, I understood, she was able to resume her employment.

The case did not again come under my observation, till upwards of three weeks after I had first seen it, when I was desired by the clergyman of the parish to which the woman belonged, to visit her at a house at some distance from her own, as it was surmised that she had destroyed her offspring. I found her in bed, attended by a midwife, and a good deal exhausted. The uterus, emptied of its contents, could be distinctly felt through the abdominal parietes, with its fundus about two inches above the brim of the pelvis. It did not seem very firmly

contracted. The vagina was much dilated. The os uteri was patulous, capable of admitting two or three fingers, and the cervix was obliterated. The fluid issuing from the vagina was in considerable quantity—how long the discharge continued I had not the means of ascertaining—and I could not distinguish between its odour and that of the common lochial discharge. The breasts were unusually flaccid for so full a habit of body, and contained no milk. The appearance of the nipple and areola was such as might have remained since her last pregnancy.

Her story was, that while engaged alone, the day before, in hoeing turnips, in a field three miles distant from her own house, the uterine pains recurred with greater violence than before, and accompanied by a profuse hemorrhage. She immediately left her work with the intention of returning home; but, in a secluded part of the way, became so faint as to be obliged to lie down. Here a large soft substance descended into the vagina, and was quickly expelled, along with a quantity of coagulated blood. Alarmed for her safety, and at the same time anxious to preserve evidence of her innocence, she seized a detached portion of the mass, and with difficulty reached the nearest house, where she lay when I visited her.

The body she produced was preserved for my inspection. Its bulk was about double that of an ordinary-sized fist; and it consisted of a cluster of hydatids, bound together by a structure like cellular tissue, and pretty much resembling, in their arrangement, a bunch of hazel nuts. On one side, the cysts were ruptured—a circumstance corroborative, I think, of her statement, that they formed only a part of the entire mass. I gave, as my opinion, that the woman was guiltless of any criminal act.

Mrs A., aged 49, the mother of a family, was seized with uterine pains and hemorrhage, when I was called in.

The catamenia had passed five periods, and during that time she had suffered from dyspepsia, which had induced considerable debility. She believed herself now about the middle of her term of pregnancy. She had had two abortions formerly—the last about a year before. She was not sensible of quickening, but stated that, in a former pregnancy, the motion of the fœtus was not distinguishable for a longer space of time. She called my attention to the mammæ, which were remarkably flaccid, a circumstance, however, which the patient ascribed to her previous bad health. She also informed me that, shortly before the appearance of the hemorrhage, a watery discharge, which she supposed was "*the waters*," had taken place from the uterus, during a pain.

On examination per vaginam, I found the os uteri about the size of a shilling, and very dilatable. The cervix was partially developed, and the volume of the organ, as felt through the abdo-

minal parietes, also corresponded with the patient's opinion concerning the duration of her pregnancy. The os uteri was filled with a coagulum of blood. *Ballotment*, cautiously practised, gave no indication of the presence of an ovum. The uterine contractions proceeded, and, at a second examination per vaginam, made about an hour after the first, I found the dilatation greater, and a soft body presenting, a portion of which, about half the size of a hen's egg, had descended into the vagina. Being in doubt about the nature of the case, and as the hemorrhage continued to be at times profuse, and the woman's strength was rapidly failing, I decided on attempting the introduction of the hand into the uterus. By gradually dilating the os uteri with the fingers, this was accomplished, and I discovered that the cavity was filled by the soft body, of which the lower end was before felt protruding into the vagina. Ergot of rye, given in scruple doses, every fifteen minutes, soon produced contractions which, with little manual assistance, expelled the contained substance. It was a single cyst, of an ovoid form, and compact, fibrous structure, with here and there, externally, some pale, half-organized-looking fleshy fibres; and it was lined with a smooth pellucid membrane. It was capable of containing from six to eight ounces of fluid. At one extremity, being that which presented at the mouth of the uterus, there was a conical projection, consisting almost entirely of the thin lining membrane. Here, by a small opening, the contents had escaped. It seemed as if the fluid, while accumulating, had, from the corresponding increase of its pressure, caused absorption of the external wall of the sac, at this, the most depending point; and that the subsequent uterine contractions had burst the delicate membrane, and produced the escape of the fluid, mistaken for the *liquor amnii*.

I watched the progress of this case during three succeeding weeks. At the end of this time the discharge from the uterus—between which and the usual lochial discharge I could perceive no dissimilarity—ceased; and the condition of the breasts had undergone no change.

The various appearances in these two cases were carefully observed, with special reference to their bearing on the question of concealed delivery, to the diagnosis of which my attention was particularly directed, by the result of a medico-legal investigation in which I was engaged soon after commencing practice. Along with another young practitioner, I was employed to examine the woman, and report in a suspected case of this nature. Without entering into details, it may be stated, that every sign enumerated by authors as observable after child-birth was present, with the exception of recent laceration of the fourchette, the woman not being a primipara. Our report was, that delivery had very lately taken place,—an opinion strongly countenanced

by appearances found on the bed-clothes. A large circular stain, evidently made by the *liquor amnii*, and not quite dry, when inspected, was discovered on the sheet on which the accused had lain. In another case which came under the writer's notice, in addition to a similar appearance, a quantity of *meconium* was found. Two other medical practitioners, one of whom was of long standing, were examined next day by desire of the woman's friends, and gave as their opinion, that the expulsion of a *mole* might have occasioned all the appearances in question. Their report, to this effect, was also forwarded to the authorities. There was no *corpus delicti* in the case; and although one of the ordinary witnesses, a female servant in the house where the occurrence took place, declared, at the precognition, that she had heard the infant cry, while she lay in bed in an apartment adjoining the prisoner's, the prosecution was eventually abandoned.

Regarding the value of the *lochial discharge*, as a distinctive mark of child-birth, it will be perceived that my own experience *(quantum valeat)* does not concur with the general opinion. It is opposed to views sanctioned by authority from which I should not venture to express my dissent, were I assured of that opinion being the mature result of actual observation, and not merely a too ready assent to the hasty assertions of others. It will also be perceived that the condition of the breasts, in the two cases above detailed, accorded with the opinion of Dr Mason Good and others, in opposition to that more commonly entertained.

In the first case, an opinion in favour of the woman was given in the full recollection that hydatids have been known to co-exist with the fœtus in utero; but, besides the extreme rarity of such a combination, the conclusion at which I arrived was, I think, warranted in this case by the state of the mammary glands. I am not prepared to affirm, that this state will be met with under such circumstances oftener, or even as often, as one identical with that succeeding parturition; but in every case its utility to the medical examiner, when it does exist, will be the same; and it must be acknowledged that facts, and they alone, are wanting to place the matter in its true light, however little might thus be contributed to the removal of the difficulties surrounding the general subject. In the hope that they may be found, in some measure, conducive to this most desirable end, the subjoined observations are offered.

When examining, in the month of October last, a young woman accused, and since convicted, of concealing delivery, a well defined, *dark stripe, in the mesial line of the abdomen*, attracted my notice. The circumstance brought to my recollection a report of a medico-legal examination in a case of recent delivery,

from Lecieux's *Considérations Médico-Légale sur l'Infanticide*, quoted in *Beck's Elements*,[1] in which casual mention is made of a similar appearance, in these terms:—"A brownish line was also visible, running from the pubis to the umbilicus;" and this is the only notice of it that my researches in the writings of English authors on medical jurisprudence, including the works in our language professing to give a view of the state of the science at home and abroad, have enabled me to discover. At a subsequent examination in the same case, I pointed out the appearance mentioned, to my friend Dr Henry Milne of Banff, with whom I was associated in the investigation. To him the sign was also new; and although I have omitted no subsequent opportunity of making inquiries among my professional brethren, I have met with none who had any previous knowledge of it.

Since it first came under my observation, notwithstanding the difficulties in the way of prosecuting such an inquiry in private practice, I have had opportunities of seeing it in twenty-one different cases, immediately after delivery. In some of these I have also examined it in the different stages of labour, as well as at various periods after parturition. Premising that I by no means consider my experience large enough to render my testimony on the point in every respect conclusive, I proceed to detail its results. And, first, as regards

The situation and appearance of the line.—In upwards of two-thirds of the cases, it extended from the pubis to within an inch or an inch and a half of the ensiform cartilage, without interruption, except at the umbilicus, and occasionally for about three or four lines below; in which situation, when wanting, a whitish glazed appearance, resembling an old cicatrix, usually occupied its place.

In the remaining cases a space, varying from an inch to perhaps two inches and a half, *above* the umbilicus, was unmarked, and in a solitary instance among these, the line was also wanting for the extent of about *two inches below* the umbilicus; but in no instance that has yet come under my notice, did the appearance, shortly after child-birth, being the period to which the description from Lecieux refers, agree with that description in being wholly confined to the space between the pubis and umbilicus.

Its breadth was usually from a line to two lines, and the edges, in some cases, were very clearly defined; so much so as to give it the appearance of a streak made with a camel's hair pencil and *umber*—the colour being a muddy brown, varying in intensity in different individuals. I am inclined to believe that the variation in its hue is subject to the same causes as that of the areola round the nipple; at least, the cases in which I have found the

[1] P. 312.

tint of the former deepest, were invariably those where the areola was very dark—in persons with dark hair and eyes.

I at first entertained the idea that the situation of the *dark line* was as deep as the linea alba, and its occurrence in some way connected with the prolonged distension to which the recti muscles are subjected during pregnancy; but subsequent observations have corrected this impression, convincing me that the appearance resides entirely in the common integument. In a rickety patient, whom I saw two days after accouchement, and in whom the integuments lay in loose folds over the abdominal muscles, giving the line the appearance of being very much bent towards the depending side, I found, on pinching up and folding the skin, that I could twist the line in a corresponding manner. By laying a portion of the integuments over my finger, and pressing from below, the dark tinge could be made to disappear, returning immediately on the pressure being removed.

The period at which the line becomes visible, my observations have hitherto been too limited to allow me to determine with precision. The conclusions to which they lead, however, are, that it observes considerable regularity in this respect, and that it is first perceptible in the eighth month of gestation, probably in the early part of it. I have seen it in one instance, faintly marked, so as to be perceived with difficulty, except in a particular position, and at the distance of some feet from the patient, in the first week of the eighth month,—ten days later it had become tolerably distinct in the same patient. In another case I found it well marked about the beginning of the last month. I have made several examinations in the fifth, sixth, and seventh months of pregnancy, in different cases, without in a single instance discovering any trace of the sign.

I have met with it above a dozen times at the commencement of labour, quite distinct; how much earlier it might have been seen in these cases—with the exception of one already referred to, as that where it was observed in the beginning of the eighth month—I had no opportunity of ascertaining.

The period at which the line disappears, I believe to be in the course of the second month succeeding parturition. I have seen it, in one and the same case, distinct about a fortnight after delivery; less so in a month; and at the end of two months it had entirely disappeared. In another, I found it apparently fading between five and six weeks after delivery; and, in another case, where I had seen it very distinctly marked immediately after child-birth, I had occasion to inspect the abdomen nine weeks subsequently, when the line had completely vanished.

The changes it undergoes, in addition to those already indicated, deserve notice. Immediately after the discharge of the *liquor amnii* when it is abundant, or where it is scanty, after the expul-

sion of the child, the line becomes very perceptibly darker. Of this fact repeated observation has convinced me. The portion of the dark line below the umbilicus will, I believe, be found to be, in general, the last to disappear.

In no case where I have looked for this appearance, within the period above stated as that to which its presence is limited, have I failed to discover it; although frequently, in the imperfect light in which the inspection had to be made, it might have eluded my observation, had I not been prepared to find it.

A few cases of abdominal enlargement from ascites and other causes have occurred in my practice, since my attention was first attracted to the sign under consideration. In all these, even where the distension was as great as at the full period of utero-gestation, the *dark line* was absent. About a year ago, at the house of a patient in the country, I incidentally saw a woman, advanced in life, with her abdomen enormously enlarged from internal disease, under which, she informed me, she had laboured for upwards of thirty years—the great weight she had to support allowed of but little exertion, but her general health was amazingly little impaired. Conceiving that a more minute examination of the case might be useful in elucidation of the present subject, I very recently obtained it. The abdomen, over its entire extent, has an unyielding feel, as if filled by a hard body, except at the umbilicus, where the diseased structure appears as if perforated, to allow the protrusion of a portion of intestine about twice the size of a turkey's egg. To give an idea of the great degree of distension which the abdomen has undergone, I may mention that the circumference of the chest, just below the ensiform cartilage, where the upper end of the diseased mass projects, is 31½ inches, while that of the abdomen, immediately below the exomphalos, where the distension is greatest, is 52 inches. Not the slightest trace of the dark line is perceptible on any part of the mesial plane of the abdomen.

The above considerations, then, lead me to conclude, that simple distension, however great, however long continued, and whether quickly or very gradually applied, will not give rise to the appearance in question; and I am therefore disposed to consider it as much an indication of the presence of a fœtus in utero—or of the recent expulsion of one—as the mammary areola.

It is true that the question again arises, May not the presence of moles or hydatids also occasion this appearance? and that observations of the appearances attending these morbid products, sufficiently numerous to warrant a decided negative, are still wanting; but I apprehend that if, as Dr Burns believes, the same degree of distension as is caused by the gravid uterus at the end of the term of pregnancy, be, in the case of moles or hydatids, "*extremely* rare," the presence of the *dark line*, in these cases,

will be still more so. Be that as it may, the foregoing details regarding it, imperfect as they are, will, I think, justify the following inferences.

1. The *dark line* will at least be useful as an addition to the aggregate mass of the signs of delivery.

2. Being so constantly observable after delivery, its absence in a suspected case may, of itself, and *à fortiori*, where other indications of a similar tendency are present, be regarded as negative evidence of no slight value.

3. On this account, too, it will go far to supply the place of another sign, to which, as we have seen, very great importance is attached,—laceration of the fourchette,—in the numerous cases where the latter is wanting. When both co-exist, with the other usual signs, the evidentiary force of the whole will be irresistible.

4. Where there is no *corpus delicti*, the presence of the *dark line* will be presumptive evidence, of itself, that the woman has given birth to a viable child: along with other similar indications, the presumption will be very strong.

5. Where there is a *corpus delicti*, the presence or absence of *the line* will serve as a test of the accuracy of the opinion formed from an examination of the child's body, respecting the maturity or immaturity of the same.

6. And it will thus occasionally give some assistance where difficulty exists in identifying the body of the child found, as the offspring of the accused.

7. *The dark line* will enable us to detect the occurrence of delivery at a greater distance of time after it than the period fixed by authorities as the latest at which an opinion ought to be given.

8. The changes occurring in *the line*, at different periods, might even, had our knowledge of them all the precision of which it is susceptible, serve to indicate, in some cases, with an approximation to accuracy, the time at which delivery took place.

Should the views above advanced be found to possess sufficient interest to originate an investigation into their soundness, by those whose sphere of observation is more extended than my own, my object in submitting them to the notice of the profession will have been fully attained.

KEITH, June 10, 1842.

PART SECOND.

REVIEWS.

Chemistry in its Application to Agriculture and Physiology. By JUSTUS LIEBIG, M.D., Ph.D., F.R.S., M.R.I.A., &c. *Edited from the manuscript of the Author by* LYON PLAYFAIR, Ph.D. Second Edition. London: Taylor and Walton. 1842.

As this work has often been reviewed already, it may seem to be out of time to say anything more about it. We differ from such as think so. Now that it has been be-praised on the one hand, and assaulted on the other, till it has fairly passed into the classics of our science, it is both easier to do justice to its remarkable contents, and not so difficult to keep the mind clear of every bias, either in favour of the gifted author or against him. The dazzling effect of its first appearance, and the shock it communicated to the prejudices of many chemists are over; and we may now examine it with impartiality, as well as more profitably than any earlier. Our position is this: Liebig is a man of genius and unwearied labour, having achieved many conquests with his single hand, and led on his young band of followers with both ardour and sagacity; let us see what he has been able to do for organic chemistry applied to agriculture and physiology, now that his first production, which was published two years ago, is before us with the authority and improvements of a second edition.

Since all the processes of agriculture, natural as well as artificial, are complicated, not only with the refined pneumatic chemistry of the most modern times, but also with the very latest results of the analysis of exorganic substances, it is not to be expected that the theory of chemistry should have yet done anything considerable for the practice of agriculture. Bacon saw the connexion between the subjects, but treated it no better than the "way of preserving life," or the "doctrine of sympathies." Sir Kenelin Digby speaks of the saltpetre of the air as a good thing for crops, and Davy, in his nineteenth year, quotes the assertion as an ascertained truth. In a word, to pass by all the crudities of the childhood of the science, with its too hasty though generous enthusiasm for the arts, that rude enough, yet pregnant experiment of Priestley, when "he chanced to live near a brewery," on the absorption of "fixed air" by his sprigs of mint, was the true dawn of a scientific agriculture. Yet this fine discovery of the relation of the vegetable to the animal world, and of both to their common atmosphere, was some time of being followed up by a systematic attempt to embody that remarkable fact, and the kindred observations to which it might conduct, in the art of cultivation. Nothing worthy of the name appeared till the brilliancy of Davy's reputation, as a kind of omnipotent experimenter, and the success with which he investigated the process of tanning, made the Board of Agriculture engage him to deliver three lectures, which have been before the world for nine-and-twenty years. They are as methodical and luminous as *such* a man could not fail to render them; while they are no more satisfactory than the state of organic chemistry at the time they were composed

could have rendered them in any ordinary hand. A judicious, sometimes learned, and always elegant compilation of all that could well be said on the several topics under consideration, they contained very few new observations bearing directly on agriculture as an art, and fewer original reflections on the general subject than might have been expected. With the exception of isolated and very partial little exertions, the momentous inquiry had never been broached again with anything like adequacy, till the British Association requested Professor Liebig to prepare a systematic report, which he has done in the work under review. It were very interesting to take a survey of the exact state of matters in this department of investigation when this work was begun, and then proceed to an estimate of the many new observations, applications, and general reflections it contains; but it would occupy too much space in a purely medical periodical like this. In truth, we must content ourselves with a hasty glance. Suffice it, then, that we just enumerate our author's more important positions, and notice the general scope and method of his researches in respect of agriculture; and pass on to the second part of the book, which is full of matter important to the physiologist and the physician as well as the chemist.

Here, then, the writer first shows that humus, humic acid, ulmin, and the other varieties of vegetable mould, or decaying fibre, are by no means food for plants, as has always been supposed. This is established on calculations respecting the solubility of humus even in alkali and alkaline bases, and the quantity of such bases in the whole substance of different crops on given areas of soil; on the considerations that there was no humus for the earliest vegetable growths of creation, and that though "a certain quantity of carbon is taken every year from the meadow or the forest, in the form of wood or hay, the quantity of carbon in the soil augments;" and the fact that the composition of humus is just that of the chief substances of vegetable form, *minus* water. This is an important point. Jethro Tull, according to Davy, advanced the opinion in 1733, that minute earthy particles, of natural or artificial manure and soil, formed the whole nutriment of plants. Duhamel received, and extended the same error. Hassenfratz and Saussure appeared to have made out that animal and vegetable matters are absorbed in solution by plants and appropriated. Even Davy, though well aware that "neither water, nor air, nor earth supplies the whole of the food of plants," thought that manure, when dissolved in water, can be taken up by the roots of plants. Such an opinion has hitherto affected the practice of culture to an important degree. Liebig's view is equally practical in its tendency, and that not to the detriment but the benefit of the art. He shows that the use of mould, desiccated composts, charcoal, and such substances, depends on the carbonic acid and ammonia they either slowly eliminate in the course of decomposition, or absorb from the atmosphere. The mechanical qualities of soil, considered as a pulveriform granary of gaseous nutriment, are thus for the first time brought to view with anything like the breadth and decision which they deserve. Here is a clear and comprehensive conception for agriculturists, and it is their part to elaborate it in the fields. It may here be stated, however, once for all, that it is our conviction that Liebig has very little to teach the best agriculturists of this country in the way of practice, save the value of human excrements, and the comparative inutility and disadvantages of the dung of herbivorous animals. Theory first follows, and then overtakes practice. In the person of Liebig, as the leader of the present school of organic chemistry, practice has just been passed, but no more; and there is now reason to expect that science will point the way of practice with her accustomed vigour and precision.

Our author next insists on the discovery of Priestley, Sennebier, and others, that carbonic acid is absorbed by plants, and that as much oxygen as enters into the composition of that gas is expired by them, so as to maintain the balanced composition of the atmosphere in harmonious opposition to the

processes of animal respiration and of combustion in its various forms; while he modifies the *rationale* of the fact. Calculating that the atmosphere contains "3000 billions Hessian lbs. of carbon, a quantity which amounts to more than the weight of all the plants and all the strata of mineral and brown coal which exist upon the earth;" and finding that, according to the observations of Lavoisier, Seguin, and Davy, man alone could change all the oxygen of the air into carbonic acid gas in 303,000 years, while "a small town like Giessen" produces more than 1000 million cubic feet of the same gas by its mere wood fires—he reasonably concludes that the carbon of the atmosphere is far more than adequate to supply the wants of the vegetable kingdom. This way of calculating from the little to the great is the principal charm of the report before us. The atmosphere contains only 0·000·415 of its volume of carbonic acid. Yes; but it is 45 miles higher and wider than the world itself, so that at that very rate, insignificant though it seem, there are really 3000 billions lbs. of solid charcoal dissolved in it;—that is to be considered. So does he proceed with the ammonia of the air and the salts of the earth, till we discover that, though we surely knew the most of it before, somehow we are surrounded by a flood of new light which reveals a hundred things we never dreamed about. No wonder he despises "all the trivial experiments under a glass jar," when he has learned to look with so much intelligence on the great *experimentum crucis* of the Creator under the concave of heaven!

In connexion with this point, he shows that the emission of carbonic acid by plants during the night, is a mere mechanical exosmose of dissolved acid no longer assimilated by the influence of light; and that the absorption of oxygen in the same circumstances is a common chemical phenomenon produced by the oxydation of their resins and oils during the quiescence of the assimilative function.

Humus is a compound of carbon with oxygen and hydrogen in the water ratio. It slowly converts oxygen into its own bulk of carbonic acid by its gradual decay, till it become a solid substance like coal, when oxidation ceases. Carbonic acid is thus presented to the radicles of young plants, till they grow up to be able to live on the carbonic acid of the atmosphere; and then at the time of blossoming and fruiting, the carbon lent by the soil to the infant plant is restored with interest by the adult in the form of carboniferous excrement, so that the mould does not diminish but increase from year to year in a soil.

The hydrogen of plants is, of course, derived from water; but our reporter speculates on the method in which it is assimilated, though "only in order to render the process more capable of comprehension." It is far more consonant both with a number of well-known facts, and the general theory of the science, to suppose that carbonic acid is not directly decomposed, but water; that the oxygen of the water is evolved; that the hydrogen of the water combines with carbonic acid in the formation of the staple ingredients of plants—fibre, starch, and others; that in the production of the vegetable acids, only part of the oxygen of the water is set free; and that when oils and resins are generated, all the oxygen of both water and acid are either eliminated or otherwise appropriated. A multitude of considerations render this view extremely probable. The atomic equation is the same either way. The formation of oils and resins alone is thus the source of 980 cubic feet of oxygen for every lb. of hydrogen they contain,—itself an important fund of oxygen to the animalized atmosphere.

Ammonia had not been detected in the atmosphere; and little room to wonder, for "if 20·800 cubic feet of air contain one grain of ammonia, ten cubic inches, the volume usually employed in analyses, must contain only 0·000·000·048 of a grain." A pound of water, diffused through the same space, coming down in rain, condenses the grain; but suppose it condense only *one-fourth*, still 40,000 square feet of soil must annually receive upwards of 65

lbs. of nitrogen; a quantity which is more than is contained in the respective crops of wood, hay, and beet-root, and less than in those of corn, which are grown on that area. It has been settled beyond doubt in the laboratory at Giessen, that rain and snow always contain ammonia. Then the observations of Willbrand, Liebig, Robiquet, Boussingault and others, have shown that there is free ammonia in all the fresh juices of every part of almost every kind of plants. These considerations combine with the extreme difficulty of making free nitrogen unite with any substance whatever, and the complete absence of any other considerable source of nitrogen, to prove to one's satisfaction, that plants procure nitrogen for their gluten, albumen, quinine, and the like, from atmospheric ammonia, diffused around them, carried down by rain, and absorbed by vegetable mould, alumina, peroxide of iron, sulphate of lime, and other ingredients of soil. Hence the necessity of animal manure for the grains, the seeds of which contain so much nitrogen; the improvement of a meadow of grass, which contains 1-100th of nitrogen, by spreading gypsum over it, so as to form, by double decomposition, sulphate of ammonia and carbonate of lime; and several other beneficial practices. The only obvious source of the generation of ammonia is the decomposition of animals and of vegetables themselves; the herbivorous class of the former concentrating in themselves the nitrogen diffused among the vegetables on which they live.

It is inferred from the infallible presence of certain inorganic constituents of plants, that they are essential to growth; and from a number of very curious observations (such as the invariable presence of phosphate of ammonia in the seeds of the grasses, and silicate of potash in the epidermis of the same, nitre in nettles, soda in *salsolla kali*, and others), it is very likely that there are specific relations between particular plants and particular salts. From four analyses by De Saussure and Berthier, which had led them to conclude, that the inorganic constituents exert no material influence upon the development of plants, it appears, when the light of the atomic theory is shed upon them, that although two pines growing on different soils do certainly contain different ashes, and yet are equally healthy, the quantity of oxygen in the bases contained by both were in reality the same; and that two firs, in two other different soils, showed the same beautiful coincidence. A pine on Mount Breven yielded only half as much potash and nine-tenths as much lime as another on Mount La Salle, but contained a considerable proportion of magnesia, which the other wanted; and the neutralizing power of the three bases in the former tree was exactly the same as that of the two bases of the latter. The organic acids apparently necessary in different kinds and degrees in different plants, must be combined either with alkalis or alkaloids, —a proposition which is pregnant with application. With a few special exceptions, the supernumerary inorganic salts in the juice of a plant would seem to be unimportant, although, doubtless, these exceptions will become more numerous when the habits and composition of more genera shall have been examined. Liebig illustrates this part of his subject with eloquence and precision, authenticating his opinions by a multitude of facts and ingenious considerations. He likewise takes an opportunity here of mentioning that ammonia is never absent from that borax which is sublimed from the bowels of the earth along with the steam which rushes into the lagoons of Castel Nuovo and Cherchiago; adding, with emphasis,—*This ammonia has not been produced by the animal organism; it existed before the creation of human beings; it is a part, a primary constituent, of the globe itself.*

Such are the few simple and luminous principles, with which our author approaches the practical subject of agriculture in its more important details, the use of humus, the composition and fertility of soils, fallow, the interchange of crops and manures. We must not follow him here, but cannot refrain from heartily subscribing to the general scope of the views he inculcates, and attesting that this part of the work under review is as great an advance beyond Davy as Davy came beyond zero. Without the elegance and

fine method of our countryman, he not only stands on a much higher point of view, but looks abroad with more determined self-confidence of insight; and accordingly does more for his subject. Davy's is a work of greater talent, and Liebig's of greater genius.

Let us inspect the second part of the treatise with a somewhat more critical eye. It is on the chemical processes of fermentation, decay, and putrefaction, topics which condense in themselves all the difficulties which perplex the larger subject of organic chemistry, and are related to some points of great pathological interest. Here we find much to be grateful for, more to admire, but something to controvert. Liebig is a man of principles, being remarkable for the width and height of his views on questions of practical science, and however imperfectly methodical in the explication of his opinions, his facts always tend to crystallize around the line of his progressive thought. This may be traced from his earliest to his latest efforts; as will be the case with every man of such genuine metal. Now, in this second part there is one great central thought which actuates all the minor views, just as they give cohesion to the details of experimental observation which are adduced. That thought we shall impugn; but in such a manner as to leave all the less generalizations and the statements of fact untouched; unless, indeed, in such instances as future observation may modify them. Accordingly we shall first present an analysis of the latter.

Next in importance to the great principle, which we are to hold in question, is the admirable manner in which the analogy between the phenomena of organic and inorganic chemistry is decried and hunted down. This was necessary. Since the overthrow of that Paracelsian iatro-chemistry which solidified rickety bones by plastering them up with phosphate of lime, physiologists have gone to the opposite extreme. Leibnitz, Fray, Robinet, and others, taught their disciples that those material particles, which become the integrants of vegetable and animal forms, are originally different from the atomic constituents of the mineral kingdom. Almost all physiologists, and some chemists, have of late years concluded, that some external cause of molecular action must be introduced in order to the production of organic compounds out of mineral elements, and have entertained the conception of "vitality," modifying the chemical affinities of bodies, *quite otherwise than gravitation and heat*, so as to produce compounds defying all the ordinary tendencies of their ingredients, consequently incapable of existing in the dead subject, and beginning to melt away in putrefaction, immediately on the extinction of life. Even Berzelius, holding by the one-sided electro-chemical theory which Davy, Ampere, and he, constructed among them, once supposed "vitality" to be endowed with the power of inverting the electric polarities of atoms; while Fletcher, Wagner, and we understand Owen, have gone the length of believing that this same "vitality" can decompose, and so transmute the elements! These hypotheses have been had recourse to, for the purpose of explaining the inexplicable difference between inorganic and organic compounds. Now, to Liebig's clear vision, the atmosphere having meanwhile been clearing by a spontaneous slow combustion and decay of the phantasms that obscured it, no such difficulty exists. This hypothesis of compound radicals, which we reviewed a year ago,[1] shows how analogous the constitution of the most complex organic proximates is to that of the simplest haloid; and he now adduces some fine illustrations of the similarity between the decomposition by re-agents of such proximates, and that of some well-known instances of decomposition in inorganic nature. The latter are discussed under the head of chemical transformations.

Crystallized oxalic acid is deprived of its water by the inferior attraction of sulphuric acid. Oxalic acid cannot exist in a free state, but the instant it

[1] February 1841, p. 101, and April 1841, p. 282.

is liberated from its water of crystallization, it breaks up into its two co-efficients, carbonic acid and oxide. The same mineral acid deprives dry wood of its oxygen and hydrogen, in the form of water impressed on them. The cases they represent are identical in principle with the great mass of decompositions and new combinations by re-action in the mineral world.

Cane sugar contains the elements of alcohol and carbonic acid, all but the elements of a single atom of water. Dissolved in water, and mixed with a little fermenting yeast, a re-action immediately begins between atoms of water and sugar, producing the resolution of every two into alcohol and carbonic acid; and yet neither the yeast itself, nor any of its products, re-acts on either sugar itself, or either of its products. This is fermentation. To produce it, the yeast must be in the act of fermentation itself, and the fermentation of the sugar stops whenever the yeast is exhausted. In those vegetable juices and decoctions which are fermented in the arts, there exists a glutinous compound, which is changed into yeast during the process, so that the fermentation of the sugar in these liquids continues as long as any of this remains; and a small quantity of artificial yeast is sufficient to brew a great quantity of wine or beer. Sweet wines are produced when there is an excess of sugar over this vegetable albumen; acid ones where there is a deficiency.

Yeast is a composite azotised substance, which is unstable from the very complexity of its constitution, as well as ready for decomposition on the two-fold account of the indifference of nitrogen, and the attraction of carbon for oxygen, and of nitrogen for hydrogen, which seems to be the only element with which nitrogen is strongly disposed to unite. Tremulous as is the union between its elements, however, yeast does not fall down into simpler proximate constituents when simply dissolved in water; which is the case in the following beautiful instance of an analogous body. "The characters of the hydrated cyanic acid, one of the simplest of all the compounds of nitrogen, are perhaps the best adapted to convey a distinct idea of the manner in which the atoms are disposed of in transformations. This acid contains nitrogen, hydrogen, and oxygen, in such proportions, that the addition of a certain quantity of the elements of water is exactly sufficient to cause the oxygen contained in the water and acid to unite with the carbon, and form carbonic acid, and the hydrogen of the water to combine with the nitrogen and form ammonia. The most favourable conditions for a complete transformation are, therefore, associated in these bodies, and it is well known, that the disunion takes place on the instant that the cyanic acid and water are brought into contact, the mixture being converted into carbonic acid and ammonia, with brisk effervescence." P. 244. But admit air to contact with yeast, and it immediately begins to absorb oxygen, and re-act on water at the same time: a simultaneous double process which infolds that of putrefaction and that of eremacausis, decay, or slow combustion. No better instance could be brought forward of the simple putrefaction than that which has just been quoted: "it is putrefaction in its simplest and most perfect form, because the new products are incapable of further transformations." It is usually more complex, as in the familiar instance of the juices of beetroot, parsnips, and onions. "Such a juice undergoes spontaneous decomposition, at a temperature of from 95° to 104° (35°—40° C). Gases possessing an offensive smell are evolved in considerable quantity, and when the liquor is examined after the decomposition is completed, no alcohol can be detected. The sugar has also disappeared, and with it all the azotised compounds which existed in the juice previous to its fermentation. Both were decomposed at the same time; the nitrogen of the azotised compounds remains in the liquid as ammonia, and, in addition to it, there are three new products, formed from the component parts of the juice. One of these is lactic acid, the slightly volatile compound found in the animal organism; the other is a mass resembling gum-arabic, which forms a thick viscous solution with water. These three products weigh more than the sugar contained in the juice, even without calcu-

lating the weight of the gaseous products. Hence, they are not produced from the elements of the sugar alone. None of these three substances could be detected in the juice before fermentation. They must, therefore, have been formed by the interchange of the elements of the sugar with those of the foreign substances also present. It is this mixed transformation of two or more compounds which receives the special name of *putrefaction*." Pp. 250, 251. As for eremacausis, the best example is that of the decay of wood, since it is so important in the economy of vegetable growth, and thereby of animal life. The formula of oak wood, according to Gay-Lussac and Thénard, is C^{36}, O^{22}, H^{22}. Exposed moist to the action of the atmosphere, it absorbs oxygen, and replaces it by an equal bulk of carbonic acid. The longer it oxidates, the slower, till it stops altogether, when the wood, having passed through a continuous progress of decay, ends in the form of a coaly humus. The *proportional* quantity of carbon in the decaying wood increases as this slow combustion proceeds. It is, accordingly, evident, that the change might be expressed by the proposition that water is eliminated, while the carbon undergoes a slow conversion into carbonic acid; but our reporter successfully maintains that it is the hydrogen which is oxidated, and freed as water, while, for every two of hydrogen that are removed by the oxygen of the air, two of oxygen bear off one of carbon, these two elements being presented to each other in a state more favourable to combination in the specific form of carbonic acid, than even that of nascency. This is the analysis of that process, of which the formation of vegetable fibre out of carbonic acid and water, is the synthesis.

Some principles are not oxidated in this way, unless they be mixed with potassa or some such disponent body; for instance alcohol, the solution of which in that alkali "absorbs oxygen with much rapidity, and acquires a brown colour. The alcohol is found after a short time to contain acetic acid, formic acid, and the products of the decomposition of aldehyde by alkalies, including aldehyde resin, which gives the liquid a brown colour."—P. 273.

Again, alcohol and many other substances absorb oxygen, and undergo the consequent transformations, when in the same menstrua with other proximates, in the act of doing and suffering the same, "just as platinum alloyed with silver decomposes nitric acid," although by itself it is quite intangible by that agent. In azotized substances the nitrogen unites with hydrogen, while carbon and residuary hydrogen partly unite and partly are converted into carbonic acid and water, if there be not free access of air, in which case they are both wholly oxidated. When alkalis or alkaline bases are present, however, and especially in hot weather, the nitrogen of the ammonia thus produced combines with oxygen as well as its hydrogen; this being the theory of nitrification.

' These are the three processes, or rather variations of one kind of transformation, which are discussed throughout their intricate ramifications in this part of the book before us, under the names of fermentation, putrefaction, and eremacausis—a task to which the writer has brought a thorough knowledge of whatever facts can relate to it, and his accustomed strength of judgment and fertility of invention. The manner, for example, in which the complete analogy of those decompositions, which have been called catalytic, to those of the fulminating powders and bodies of high tension, like the quadro-chloride of nitrogen, and of the latter, in their turn, to all decompositions whatever, is masterly in its way. The tone, however, in which Professor Liebig is disposed to speak of the opinions of others, is highly reprehensible. How he treats the physiologists for not learning to distinguish carbonic acid from ammonia, while they have been so nobly extending their researches in a direction of infinitely more importance to the crowning phy-

sical science which they cultivate in the present poor state of what can properly be called organic chemistry! Why, a perfect physiology cannot begin till chemistry shall have been perfected, any more than chemistry itself could have even commenced to develope for itself a perfect method before mechanics and astronomy had been raised to what is technically called perfection. There is no doubt of that; physiologists will allow it; but such a method is only dawning upon chemistry itself, and it will be long till it can do anything for physiologists sufficient to tempt the merest dissector among them for a single day from that career of discovery which is conducting their leaders to such valuable results. The investigation of form and structure must precede that of constitution and genesis. Let knowing chemists by all means do all the little they can for the higher science; higher, because destined to the greatest elevation in the eventual theory of the conversion of the physical sciences, when they shall all have been consummated; just as a future perfected chemistry, or rather atomics, shall stand above mechanics, and on the same plane with astronomy. Leave physiologists to themselves. Their scientific instinct is sure to tend in the right way. Not one of them, who is at all worthy of the name, would have alienated so much as the fifth part of his time from his proper pursuit, even if he had been assured that he should end his bye study of chemistry with producing this very treatise on chemical transformations of organic bodies; and yet it could have been composed only by as profound a chemist as Liebig himself.

To return. It is with the agency productive of all these transformations among organic molecules,—that agency which, according to our author, "has hitherto escaped attention, but the existence of which will be proved in the following pages,"—that we have now to do.

"Platinum, for example, does not decompose nitric acid; it may be boiled with this acid without being oxidized by it, even when in a state of such fine division, that it no longer reflects light (black spongy platinum). But an alloy of silver and platinum dissolves with great ease in nitric acid." Pp. 220, 221.

"Copper does not decompose water, even when boiled in dilute sulphuric acid; but an alloy of copper, zinc, and nickel, dissolves easily in this acid, with evolution of hydrogen gas." P. 221.

Solution of sugar does not ferment, till fermenting yeast be added. Yeast does not putrefy till it begin to oxidate. A small quantity of putrefying matter induces the process of putrefaction on large quantities of fresh substance. A pure solution of tannic acid is not rapidly affected by the atmosphere; but "it is the very finely divided woody fibre in the act of decay, which in moistened gall-nuts converts the tannic acid with such rapidity into gallic acid." P. 274.

Alcohol, even exposed to a moderate heat, and spread over an extended surface, is not converted into acetic acid; but mixed with a little beer, or acescent water, which easily enter into eremacausis by mere contact with oxygen, it commences to suffer the change in question.

These, and many other like them, are regarded by Liebig as radically analogous; and the power, say of beer or acescent wine in the new process for acetic acid, is represented as consisting in "a condition of decomposition or eremacausis, which impresses the same condition upon the atomics of alcohol in its vicinity; exactly as in the case of an alloy of platinum and silver dissolving in nitric acid, in which the platinum becomes bruised by virtue of an inductive action, which the silver in the act of its oxidation exercises upon it." P. 276. Now, granting that this analogy is as cogent as possible, it is manifest that the least complicated instance, that of the alloy of silver and platinum, contains the cue to the explanation of them all. Well; according to Liebig, "the latter body, from *its contact* with the oxidizing silver, acquires the property of decomposing nitric acid," P. 221;

and from this quite gratuitous statement of the action of silver on platinum, (negative though the statement be), he rises to the high conclusion, that a body, "the atoms of which are in a state of motion or transposition," communicates the same to other bodies in contact with it, if they be capable of the same change as it is undergoing. This is formally put forth as a new particular of the general law of atomic dynamics laid down by La Place and Berthollet, that "*a molecule not in motion by any power, can impart its own motion to another molecule with which it may be in contact.*"

To question this theory.—On the very threshold of the inquiry, who has ever proved that it is the *contact* of silver that enables platinum to decompose nitric acid? Is an alloy not a chemical compound? And when that compound is decomposed by nitric acid, is platinum not presented *nascent* to the action of free nitric acid, just as when the chloride of platinum is precipitated by the action of potassa? Is not the only difference between these two cases to be found in the fact, that when argenturet of platinum is acted on by oxide of nitrogen, both metals receive oxygen while nitric oxide escapes; whereas, when the chloride of platinum is acted on by the oxide of potassium, the platinum receives oxygen, and the chlorine receives potassium, while nothing escapes? And could this mere statical difference not have been predicted on the simple ground of the difference in kind of the couples of substances concerned? Why, then, invent a new action of contact to explain it?

The analogy between the oxidation of platinum alloyed with silver and the fermentation of sugar, would indicate that unfermented yeast, chemically combined with sugar in solution, falls into putrefaction, frees the sugar, nascent sugar re-acts in water, and produces alcohol and carbonic acid. But how does putrefying matter in small quantity communicate its condition to large quantities of the same kind? If it ever do so *without access of air*, (which we do not believe, nor assert Liebig to maintain), then we know no fact to which it were so analogous as to allow of a common point of view, and should be content to leave it as an ultimate fact, which may be explained by future observations. It were easy, even in that case, to make a conjecture; but latent conjectures are the best, and confused ignorance were better than a false analogy. Then, as for the induction of eremacausis, it is surely enough that the action going on between the decaying body and the atmosphere brings oxygen into closer neighbourhood with that on which the process is induced, and very nearly the reverse of the *modus operandi*, in which carbonic acid passed over iron reduced from the peroxide at the lowest possible temperature, by hydrogen, prevents the metal from bursting into combustion when shaken out of the tube in which the reduction may have been effected. Certainly Liebig, in shaping out this vague shadow of a principle, has forgotten the "cunning of his right hand," and not displayed that shrewd grasp of intellect with which he is wont to handle the prejudices and throw aside the unnecessary generalizations of other thinkers. We offer no newer principle in its place, and are humbly of opinion that none is required here, any more than for those phenomena which Berzelius classified under the term catalysis. Before leaving it, however, we shall only remark, that the most striking, and, at first sight, puzzling fact cited in favour of this action of contact, is that of the total reduction, say of oxide of silver, by peroxide of hydrogen, while that body is all the more rapidly decomposed itself. This is very like an induction of the process of de-oxidation by contact; yet even it is intelligible enough in the light of the general theory of chemistry. Oxide of silver is remarkably easy of reduction. It is reduced by light at common temperatures, especially when moist. Peroxide of hydrogen (as our author himself advances against poor catalysis) is slowly decomposing, before oxide of silver is thrown in; *nascent* water is thus instantly presented to the oxide; reduces the oxide, reproducing peroxide of

hydrogen, to be decomposed in its turn, and so on in an accelerating revolution of alternate re-acting, till all the oxyde, either of silver or water, be reduced. Where is the difficulty?

It were a pity to leave off the consideration of this book, without noticing the masterly way in which the principle of the induction of the condition of eremacausis and putrefaction is applied to the explanation of miasms and contagions. Decaying animal matter, such as the rotten hearts of German sausages, gets into the circulation, and induces a corruption of the fluids, speedily proceeding to termination in death. Unassimilated particles of food are admitted into the capillaries and veins, reach the lungs with the blood, enter into oxydation, impede the aëration of the blood itself, are thus a continual cause of both local and general excitation, and perhaps produce consumption. The same with alcohol, and all indigestible proximates, which are capable of entering into eremacausis. This chapter, however, must be read by every medical man. Suffice it, now, that the strictures which have just been made on the theory of transformative inductions, are equally applicable here. We should likewise caution the enthusiastic student against giving in too much to the intensely chemical character of Liebig's physiology. We frankly profess our decided opinion, chemists though we be, that the present school of analytical chemistry is monstrously deceiving itself regarding the amount of its knowledge of organic substances in life. The truth is, there is no such thing as an organic chemistry extant. It is only the chemistry of exorganic bodies—a poor enough substitute for that glorious science of living molecules which is to dawn on the minds of physiologists in some future century. A blade of grass, that yet mysterious community of parts, so consummate in living oneness, that it can die, imbibes the moisture of the earth, inhales the fixed air and ammonia of the atmosphere, and weaves its own expanding form, with all its delicate organs and their susceptibilities, out of their dismembered particles. By a similar, but more wondrous alchemy, is the herbage of the fields transformed into the quivering fibre of still higher and higher forms of animated existence; and of all these stupendous operations we know absolutely nothing. Water, carbonic acid, and ammonia, are traced into the vessels of plants, but no farther. An organism dies, and once more falls down into the ammonia, carbonic acid, and water, from which it sprang. The chemist does all he can to investigate this return. The substances from which his inquiry begins, such as gelatine, fibrin, and albumen, are by no means organic, any more than the simpler compounds into which they ultimately resolve themselves.

S. M. B.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

REPORT OF THE RESULTS OBTAINED BY THE USE OF THE MICROSCOPE IN THE STUDY OF HUMAN ANATOMY AND PHYSIOLOGY. Part I. By JAMES PAGET, Demonstrator of Morbid Anatomy at St Bartholomew's Hospital.

The design of the present report is to bring together in the briefest possible space, the conclusions regarding the structure and the functions of the several tissues of the human body which have been rendered certain or most probable by microscopic investigation. * * *

I. BLOOD CORPUSCLES. The discovery of the blood corpuscles by Malpighi,[1] was one of the first fruits of microscopic study, and since that event few objects have been more solicitously examined. It is now agreed that they are minute, flattened, transparent cells, containing (at least during one period of their existence) round or oval nuclei, and having incorporated in them all the red colouring matter of the blood.

a. Form and Size. They are circular in man, and in all mammalia, except the camel tribe, in which they are elliptical;[2] and they are elliptical in all other vertebrata, except certain cyclostomes, in which they are circular.[3] In all they are flattened, and have rounded borders. Whether their surfaces be slightly concave or convex, depends on variations in the quantity of their contents, which may ensue either within, or after their removal from the body. In invertebrata they are less numerous, but more varied in form; for the most part they are irregular, granular, roundish, nucleated corpuscles.[4]

It is difficult to discern any strict connection between the various sizes of these bodies and the other parts of the organism of different animals. Among

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[1] Athanasius Kircher, Malpighi, and John Swammerdam have all received from different writers the honour of this discovery. Whoever will, may satisfy himself of the justice of the award given in the text, by consulting A. Kircher, (Scrutinium Phys. Med. Pestis, Lips. 1659, p. 240, and the context;) Malpighi, (De Omento, Pinguedine, &c., p. 42;) and his Autobiography in the Opera Posthuma, (pp. 25, 92, in the fol. ed.;) and Swammerdam, (History of Insects, first published in 1669, at p. 31 of Hill's edition of 1778.) Lists of the principal writers on the blood corpuscles may be collected from the General Anatomies of E. H. Weber, Gerber, and Henle.

[2] This remarkable and unexplained exception was discovered by Mandl in the dromedary and alpacha (Comptes Rendus des Seances de l'Acad. des Sc., Dec. 30, 1839,) and has been amply confirmed.

[3] R. Wagner, (Lehrbuch der Physiologie, b. i. 153.)

[4] Wagner, Lehrbuch, and Beitraege zur vergleich. Physiologie. But he regards *them* as only chyle corpuscles.

mammalia those of the elephant are the largest;[1] then come those of the capabara and rhinoceros;[2] then those of man, which have an average diameter of about 1-3500th or 1-4000th of an inch.[3] In general these of ruminants are smaller than those of other mammalia; and the smallest yet known are those of the little chevrotain and Napu musk deer, of which the average diameter is less than 1-12000th of an inch.[4] An examination of the elaborate tables by Mr Gulliver, shows that the size of the corpuscles in mammalia is not unconditionally proportionate to the size of each animal, or according to the nature of its food. Yet there is evidence enough that in each great division of the class, the size of the blood corpuscles is, with few exceptions, directly proportionate to that of the animal's body; and that in general those of omnivora are larger than those of carnivora, and those of the latter larger than those of herbivora; so that if the kind of food, and the size of the mammal be known, the size of its blood corpuscles may be probably estimated.

In birds there is a greater uniformity of size and shape in the blood-corpuscles than in mammalia; and, according to M. Gulliver, a nearer relation between their size and that of the body. They are the smallest of the elliptical blood-corpuscles, those of the camel tribe excepted; they are generally rather less than twice as long as they are broad, measuring about 1-2000th by 1-4000th of an inch, and about six times as long as they are thick. In reptiles the largest, and, by comparison, the thinnest blood-globules yet known occur; and Wagner[5] remarks it as a general rule, which Mr Owen confirms, that the longer the branchial apparatus persists, the larger are the blood-corpuscles. Thus, in the Proteus they are about 1-350th of an inch long; in the Syren 1-435th by 1-800th;[6] in the batrachian reptiles generally, about 1-1000th by 1-3000th; and their thickness is not more than one-eighth of their length.[7] This rule, however, fails when one comes to fish, in which the branchial apparatus is persistent and perfect; for in them the blood-corpuscles, though resembling those of reptiles, are generally smaller and less elongated.[8]

b. Structure and Composition.—The blood-corpuscles are generally regarded as primary nucleated cells, and no one doubts that those of birds and the lower vertebrata consist of an external cell, formed of an extremely delicate, soft, and elastic membrane, in and within which all the colouring mat-

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[1] Mandl, (Anatomie Microsc., p. 17.) Owen (Contributions to the Comp. Anat. of Blood Discs, Lond. Med. Gazette, Nov. 15, 1839,) says most of them are one-fourth larger than human blood corpuscles. According to Gulliver, (Appendix to Gerber's General Anatomy, p. 42,) the average diameter is 1-2475th of an inch, which is nearly accordant with Mandl's statement.

[2] Gulliver, *l. c. All the sizes mentioned in this part of the report, are stated in fractions of an English inch.*

[3] Perhaps the strictest measurements are those of Mr Bowerbank for Mr Owen, *l. c.* In these the average was 1-3687th, the extremes being 1-4545th and 1-3279th. Copious lists of the measurements by different observers, are given by Köstlin, (Mikroskop. Forschungen, p. 55;) in the Microscopic Journal, vol. i., and in Mandl, *l. c.* p. 10.

[4] Owen, *l. c.* Dec. 20, 1839; and Gulliver, *l. c.* p. 44.

[5] Lehrbuch, p. 153. [6] Gulliver, in Appendix to Gerber, p. 52.

[7] In the cryptobranchus japonicus (in which there is no persistent branchial apparatus) they measure 1-472d by 1-731st (Van der Hoeven, Tijdschrift fur Naturl. Geschiedenis, 1841, p. 270), but considering the great size of the animal, these enormous blood corpuscles are not disproportionate.

[8] In the blood corpuscles of the siren, as many as 20 or 30 granules can be seen in one plane of the nucleus. (Owen, in the art. *Siren*, Penny Cyclop.) The proportionally longest corpuscles are those of the crocodilus lucius; they measure about 1-950th by 1-2538th of an inch. (Mandl, Comptes Rendus, Dec. 23, 1839.)

ter seems to be contained, and of an internal parietal nucleus, generally similar in form to the cell, but about one-fourth its size, colourless, and in the large corpuscles of some of the amphibia containing a number of distinct granules.[1]

It is questioned, however, especially by Valentin, Wagner,[2] and Gulliver,[3] whether the corpuscles of mammalia have nuclei, or whether the central spot be not merely produced by the accumulation of the colouring matter at the circumference. Henle[4] would decide the question by saying, that in a few of these small corpuscles there are nuclei; but that in the majority (and these the most fully developed), there are none; so that he thinks it probable that here, as in some other cases, the nucleus, after the cell is perfected, is gradually absorbed.

According to Dr Barry,[5] the young blood-corpuscle in all the vertebrata is a mere disc, with a depression in the centre. In mammalia it retains this form; in the other classes the disc becomes a nucleated cell. The nucleus at first communicates by a pellucid orifice ("nucleolus") with the exterior of the corpuscle, this orifice occupying the place of the depression in the original disc. The orifice becomes narrower, and the nucleus finely granular, and these changes immediately precede the division of the nucleus into minute discs. The discs, whose number is multiplied by successive divisions, and by the gradual appropriation of the nucleus from its circumference towards its centre, arrange themselves so as to form a flat filament, having an appearance the same as that which he finds to be presented by fibre in all the filamentous structures of the body. According to the number of discs, this filament forms within the blood-corpuscle either a ring (as in man and most mammalia, where they are comparatively few), or a coil (as in birds, amphibia, and fishes, where the discs are much more numerous, and the filaments proportionally longer.)

The filament thus formed is flat and deeply grooved on both surfaces, being thereby thinner in the middle than at the edges. The edges are rounded; and, when seen on its edge, the filament at first sight seems to consist of segments separated from one another by oblique lines. When perfected, the filament undergoes various changes; sometimes unwinding itself into a straight fibre; at others, continuing circular, while smaller coils of similar filaments are formed within it, from a residual portion of the nucleus. In all cases the filament is reproduced by self-division, so that out of a single filament a fasciculus may be formed. Such changes are seen going on in coagulating blood. The filaments now mentioned exactly resemble those which are found in a great many, both animal and vegetable tissues; nor can any definite line of distinction be drawn among the gradations from them to the double spiral filament, of which Dr Barry believes that the primitive fibrils of muscle, and certain other tissues are composed.

In all cases in which a nucleus is present, it differs in chemical characters from the cell. The colouring matter, or hæmatosine, is easily soluble in water, by which it may be completely washed out of the enveloping cells. The latter are composed of a peculiar albuminous substance (*globulin* of Berzelius), which only slowly dissolves in water; the nuclei consist of a different albuminous substance, more like coagulated fibrine, which is quite insoluble in water, and they contain so large a quantity of inorganic matter, that they completely retain their form, and apparently their substance, after combustion.[6]

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[1] The anarrhicus lupus presents an exception in this respect. Its corpuscles measure 1-1750th by 1-3750th. (Van der Hoeven, *l. c.*, p. 272.)

[2] Lehrbuch der Phys., i. 154. [3] *L. c.* Appendix, 13.

[4] Allgemeine Anatomie, p. 432.

[5] Philosophical Transactions, 1841, &c. The description in the text has been kindly furnished by Dr Barry himself. See Appendix A.

[6] See Harting, (Gissingen betreffende de eerste vorming der cellen, &c., Tijdschrift

II. Lymph and Chyle Corpuscles. In the villi of the small intestines, the chyle is a pure milk-white albuminous fluid, which does not spontaneously coagulate. Its opacity is due to a number of minute oil globules, varying according to the nature of the food, which float in it without any mixture of fibrine, or of the peculiar corpuscles which afterwards appear. Some of these particles of oil, distinguished by their immeasurably minute size, and by a more general similarity of character than the others present, are described by Mr Gulliver[1] as forming the *molecular base* of the chyle. Besides these constituents, the more mature chyle, especially after it has passed through lacteal glands, contains the proper *chyle corpuscles*,[2] which are colourless, moderately transparent, roundish bodies, some larger, some smaller than blood corpuscles, apparently composed of numerous granules arranged round one or more central molecules. How these are produced, whether by an aggregation of a number of the minutest oil globules that form the molecular basis,[3] or by a genuine development of cells from the fluid of the chyle, which may be considered as a cytoblastema, is not yet certain; but be this as it may, as the corpuscles appear and increase, the oil globules diminish, and the chyle, acquiring a greater proportion of fibrine, becomes more firmly coagulable.

The lymph corpuscles closely resemble those of the more perfect kind in the chyle. Some of them are generally discernible in the blood, moving, as it circulates in the capillaries, in the peripheral portion of the current. They are somewhat larger than the blood corpuscles, white, strongly refracting light, roundish and granular, or mulberry-like.[4]

III. Fat Cells.—There are several instances of cells containing oil at certain periods of their development, but those to which the name of fat-cells is peculiarly given, are the minute vesicles which, lying in the areolæ of the fibro-cellular tissue, constitute the adipose tissue. These are true primary cells, whose contents are oil instead of the albuminous fluid with which most are filled.[5] They are, for the most part, nearly spherical, and vary from 1-240th to 1-1300th of an inch in diameter;[6] their membranes are structureless and remarkably thin; and they are usually aggregated in bunches,

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voor naturl. geschiedenis en physiologie, 1841, 8 Deel;) an essay pointing out several remarkable analogies between the forms assumed by certain inorganic precipitates, (such as those of the carbonates of lime and iron) and the forms of the nuclei and cells of organic tissues. The best microscopico-chemical analysis of the blood corpuscles is in Wagner, (Lehrbuch, p. 160.) The brief notices which can alone be admitted here, will but inadequately tell how much aid the microscope has afforded to animal chemistry.

[1] In Gerber, Appendix, p. 88. See also his Contributions, &c. Philosophical Magazine, June 1842.

[2] Discovered by Leuwenhoeck, and first well described by Hewson.

[3] They do not indeed act similarly on the application of chemical tests; but the observations of Ascherson, presently to be mentioned, show how it is possible that in their aggregation, the minute molecules may have their apparent chemical properties modified.

[4] The fullest history of the chyle and lymph is in Nasse, (Unters. zur Physiologie und Pathologie, bd. ii.;) and in Gerber, (Appendix, by Gulliver.) See also Carpenter's Principles of Human Physiology, p. 460.

[5] Malpighi (De Omento, &c.) first described the adipose tissue with some accuracy. Fontana (Traité sur le Venin de la Vipere, &c.) first clearly described its elementary cells. To Raspail (Nouv. Syst. de Chimie Organique) and Schwann (Mikroskopische Untersuchungen), however, are due nearly all the more important facts regarding their minute structure.

[6] See E. H. Weber (Hildebrandt's Anatomie, bd. i.), and Krause (Anatomie des Menschen, bd. i.)

traversed and enveloped by fibro-cellular tissue, conveying small blood-vessels.[1] Sometimes each cell bears on its wall a nucleus;[2] and in their early periods the oil in each is not in a single drop, but is composed of one comparatively large and several small drops, which subsequently coalesce.[3]

A fact may be mentioned here by which Ascherson[4] has endeavoured to explain the development, not of the fat-cells alone, but of all primary cells; namely, that if a minute drop of oil be placed in contact with a solution of albumen, it directly becomes coated with a film of the latter, so as to resemble a fat-cell. Any one may observe the fact in preparations in which a greasy bone is put in weak spirit; for wherever the oil oozes slowly the bone becomes covered with this artificial fat, for which the filmy envelopes are furnished by the albumen dissolved in the water of the diluted alcohol. It is not probable that the fact admits of an extensive application in the physiology of cell-development; yet there is sufficient analogy between these artificial products and such bodies as the minute corpuscles of the chyle, the granulated oil globules *(corps granuleux)* of the milk, and some others, to render it probable that their developmental process is in great measure the same.[5]

IV. CUTICLE.—The physiology of cuticle has received an altogether new aspect from recent investigations, and especially from those of Henle.[6] He has shown that, with very few exceptions, all the free surfaces of the body, both those of the integuments, of the serous cavities, of the mucous tracts, of the blood-vessels, and of the gland-ducts, are invested by a membrane composed of one or more layers of primary cells, forming a cuticle or epithelium.

Forms and Arrangements.—The elements of these cuticles, however, have not all the same form; and while they all serve the common purpose of protecting the tissues beneath them, many, perhaps all, add special functions to which they are adapted by a peculiar form or energy of their elements. They are all, in their complete state, formed of nucleated cells, in which, while the cells in different parts present many varieties, the nuclei are generally round or oval, flat and colourless, or reddish;[7] and the latter contain one or two distinct small nucleoli, and others very pale and small, and varying in number. The nuclei measure from 1-5775th to 1-3760th of an inch in

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[1] These are admirably figured by Mascagni, (Prodromo della Grande Anatomia.)

[2] Schwann, (Mikrosk. Untersuch. über die Uebereinstimmung, &c. p. 144); Bruns, (Allgemeine Anatomie, p. 32.)

[3] Schwann, (*l. c.*) Henle, (Allg. Anat., p. 181.)

[4] Ueber den Physiol. Nutzen der Fettstoffe, Muller's Archiv., 1840.

[5] The minute anatomy of the secernent glands might find its place here, since it is probable the real agents of secretion are isolated primary cells; but most of the glands are of so complex a structure that it will be desirable to describe first some more of their component parts.

[6] Before these investigations the existence of the greater part of the internal cuticles was argued rather than proved. Leuwenhoeck (Select Works, by Hoole, vol. ii. p. 126), first described with some accuracy the scales of the epidermis and of the epithelium of the mouth and vagina. Della Torre and Fontana (Traité sur le Venin, &c., t. i. f. 8-10), more clearly described the cells and their nuclei in the mucus of the eel; then Raspail, Breschet, and others gave accounts of similar cells in the epidermis; and then the cuticles of many different parts were described by Purkinje, Valentin, and other German anatomists. The existence (not the structure) of the epithelium of the intestines was shown by Lieberkuhn (De fabrica et actione Villorum). There is a complete history of the observations in this part of structural anatomy in Henle, (Allgem. Anat., p. 259.)

[7] This colour exists particularly in the nuclei of the youngest and deepest layers, (Henle.) Dr Barry (*l. c.*) points it out as one among many analogies between the epithelium cells and the blood corpuscles.

diameter,[1] and the nucleoli about 1-10th as much. The cells are usually clear and colourless, but are sometimes beset with minute points.

According to the form of the cells, Henle[2] distinguishes three varieties of epithelium; but they are not separated by strict differences, for whenever a continuous surface bears at different parts two different epithelia, there is a very gradual transition from one to the other.

The first is the *tesselated* or *plaster-epithelium*, which is composed of one or more layers of flat, oval, roundish, or polygonal cells, each about 1-1900th of an inch in diameter, and containing a nucleus of the same shape, which again contains one or more distinct, and several paler granules. This is by far the most common form of cuticle; it covers the skin and lines the ducts of the cutaneous glands, the mouth, conjunctiva bulbi, pharynx, œsophagus, numerous gland-ducts, the vagina, and cervix uteri, the entrance of the female urethra, the serous and synovial membranes, blood and lymph-vessels, and a few other parts; and, as a general rule, has a thickness directly proportioned to the friction and other sources of injury to which it is exposed.

Cylinder-epithelium, the second variety, is found from the cardia along the remainder of the digestive canal to the anus, in most of the gland-ducts that open on the interior of this tract, and in the greater part of the male genito-urinary apparatus and the gland-ducts connected with it. It is composed of closely set cells of a somewhat conical, pyramidal, or cylindrical form, about 1-1200th of an inch long, whose apices are attached to the mucous membrane, or to the flat epithelium cells lying on it, and whose bases, which are usually terminated by a truncated plane about 1-6000th of an inch broad, are free. Each such cell encloses, nearly mid-distance between its base and apex, a flat nucleus with nucleoli.

In the *ciliary epithelium*, which constitutes the third variety, cells like those in the second have several fine, pellucid, blunt ciliæ, about 1-50000th of an inch long, attached to their free extremities. These, by means of some unknown power, are during life in constant motion, either whirling round their fixed extremities, so that their ends describe circles, or else waving continually backwards and forwards, and alternately rising and falling. Examples of this kind are found on every part of the respiratory mucous tract above and behind an imaginary plane drawn from the base of the nasal bones to the anterior maxillary spine, even into the air-cells, in the lachrymal sac and canals, along the Eustachian tube, and on the membrana tympani, on the palpebral conjunctiva, the cerebral ventricles, the commencements of the capsules covering the Malpighian bodies,[3] and in the female genital organs, from the middle of the cavity of the uterus through the Fallopian tubes, and for a short distance on the peritoneal surface of the latter.

The modes in which the elements of these several cuticles are connected are equally various. In the tesselated epithelium, the component cells, when there are several layers, generally lie confusedly one over the other; and those in each layer adhere by their edges with the smallest possible quantity of intercellular tissue, their mutual pressure usually making each cell polygonal. In the cylinder variety, they are generally almost in contact at their fixed extremities, while their free portions are immersed in a soft intercellular substance, which fills all the spaces between them, and forms a smooth surface over them.

Modes of growth. What has been said of the structure of cuticles, plainly indicates the change that must be admitted in their physiology. They are,

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[1] Henle Allg. Anat., p. 222.

[2] Ueber die Ausbreitung des Epitheliums, Müller's Archiv., 1838; and Allgemeine Anatomie, p. 220, from which nearly all this account of cuticles is derived.

[3] Bowman, (Cycl. of Anat., art. *Mucous Membrane*,) who denies, also, the existence of ciliary epithelium in the air cells.

in the most proper sense of the term, organised; for, besides the peculiar definite form of their elements, each cell has in itself the power by which it is developed; and it depends on the subjacent vascular tissue only, as all other elementary structures do, for the supply of the materials which it may use for its own nutrition. These materials, before they attain their ultimate form, undergo several changes, which have been best traced in the laminated varieties of the tesselated epithelium, including the epidermis and the thickest of the epithelia of the mucous membranes. In all these, the youngest layers, that is, those which lie next the vascular membrane or *matrix*, seem to consist merely of reddish nuclei, and these formed by an aggregation of granules; the cells, if there be any, being too small to be discerned from the nuclei which they contain. As these are moved from the matrix, by the new materials successively deposited beneath them, both the nucleus and the cell, which is soon obviously developed around it, grow larger; but the cell outstrips the nucleus, and at length assumes the usual appearance of an oval nucleated corpuscle. Then, as they become older and still more distant from the matrix, the nucleus either remains stationary or grows gradually more obscure, while the cell still increases in size, but becomes flat, dry, polyhedral, or quite irregular; and at the last (as one sees daily in the outermost layers of the epidermis,) falls off alone or united with many of its fellows in a shapeless scale. In the same progress also its chemical constitution is altered; at first the cell dissolves easily in acetic acid; at last it assumes the peculiar characters of horn, and is altogether insoluble in that fluid.[1]

In the cylinder epithelium, the mode of growth is the same as far as the formation of the cell around the nucleus; but then, instead of retaining nearly the same shape, the cell enlarges more in one direction than in the other; and in the ciliary variety proceeds to the production of vibratory ciliæ from one of its extremities.

Purposes.—The uses of cuticles are probably, as already mentioned, various. One is to protect subjacent parts, another to render certain surfaces smooth. But many may have more active offices. It will be seen that the elements of the most energetic secretory organs have only the same structure as these have; and it is not improbable, for many reasons, that the epithelium cells also prepare and carry off with them, when they desquamate, some peculiar fluid. The ciliary cells probably serve to fan onward the fluids and the minute particles in contact with them. The direction in which they act is most commonly, but not constantly, towards the external orifice of the canal on which they are placed; but in truth their special purpose is, in many instances, (*e. g.* the cerebral ventricles,) as uncertain as the power by which they act.[2]

V. Pigment Cells. In certain parts there are special organs for the production of colour, namely, in the pigmentum nigrum and uvea of the eye, in the membrane of the ampullæ in the internal ear,[3] in the whole of the epidermis of the negro and other coloured races, and in that of the scrotum, the areolæ of the breasts, the labia, and some other parts of light-complexioned persons.[4] In

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[1] It hardly need be pointed out that these facts prove the distinction of a rete Malpighii from the epidermis to be artificial.

[2] See, on all that relates to them, Sharpey (Cyclopædia of Anatomy, art. *Cilia*;) Purkinje and Valentin, Müller's Archiv., 1835; and B. and F. M. R., vol. i. p. 509); Pappenheim, (*ibid.* 1840, p. 510.)

[3] Wharton Jones, (Cyclopædia of Anatomy, *Organ of Hearing*,) to whom also is due the first accurate description of the pigm. nigrum; see Edinb. M. and S. J., xl. p. 77.

[4] Simon, (Ueber die Structur der Warzen, &c., Müller's Archiv., 1840, p. 151.) *The black matter* of the lungs and bronchial glands has no special apparatus. That

ll these the pigment is composed of minute, dark granules, collected in pri-
nary cells. The latter, when they lie loosely, as they do on the iris, are
val or round; but when, as in the pigment of the choroid, where they are
ost distinct, they are set closely, and in an even layer, their mutual pres-
ure makes them almost regularly hexagonal. They are nearly flat, about
-1800th of an inch in diameter, and lie in apposition, so as to form a beau-
ifully tesselated membrane. Sometimes their edges are in contact, some-
imes slightly separated by a pale line. Near the middle of each there is a
lear spot, produced by the nucleus of the cell, in which there are usually
ne or two nucleoli; and around this the pigment granules are arranged.
hey are most numerous in its immediate neighbourhood, are less thickly
ollected at a little distance from it, and at the very margin of the cell there
re often none at all. They are collected also only at the posterior surface
f the cells on the choroid; the anterior portion of each cell (that is, that
art which is turned towards the cornea), contains the nucleus, and is quite
ransparent.[1] In the negro's epidermis perfect pigment cells, like those of
he choroid, are found only in the deepest layers, and are most numerous at
he bottoms of the fossæ between the papillæ. They do not differ from those
lready described, except in being smaller and in forming several layers;
hey sometimes seem to have separate granules, not inclosed in cells, mixed
ith them.

The pigment granules are among the minutest structures in the body.
hey are flat, oval corpuscles, measuring about 1-20000th of an inch in their
ongest diameter, and about 1-4th as much in thickness; so that, according
o the direction in which they are seen, they appear flat or linear, or like
nere points.[2] When set free by the bursting of the cell, they exhibit a very
ctive molecular motion; and Schwann has noticed the same occurrence even
while they are enclosed. It is only when aggregated that they give their full
lark colour; when isolated they are nearly pellucid, or their borders only
ppear dark.

VI. Nails. Bruns[3] alone has accurately described the structure of the
ail in the adult. It consists of primary cells, almost exactly similar to those
f the epidermis, firmly fixed together in several layers. The youngest cells
those which lie at the root and in the deepest layers of the body of the nail)
re pellucid, round, elongated, or polygonal, and contain a round, granulated
ucleus, with some other granular substance. They measure about 1-1000th
f an inch in their greatest diameter, and their nuclei are about 1-10th as
arge. The oldest and most superficial cells are larger and broader, but much
hinner and more irregular in their shape. Their nuclei are rarely discern-
ble; between the old and new cells, those which are intermediate in situa-
ion, are so in structure also. The striæ and fibres, described by Gurlt,[4] are
lue, Bruns says, to the section of the cell membranes; the granules of Tour-
ual[5] are traces of the nuclei.

The growth of the nail is effected by the constant generation of cells at its
oot and at its under surface; and this process is carried on with the energy
ecessary to repair the constant waste, both at the free extremity and the

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hich tinges expectoration seems deposited in ordinary mucous corpuscles, (Martin
Barry, Phil. Trans., 1841, p. 226, Pl. xx., f. 72.) The dark colour of many superfi-
ial nævi, of liver spots, and of freckles, is due to cells of pigment like those describ-
d in the text, (Simon, *l. c.*)

[1] Henle, Allgem. Anatomie, p. 281. [2] Ibid, *l. c.*, p. 284.

[3] Lehrbuch, p. 197. Before examination he makes the nail very soft by immersing
t in an alkaline ley. His description exactly confirms what Schwann had proved of
ts development.

[4] Unters. über die hornigen Gebilde (Müller's Archiv., 1837.)

[5] Hornstoff in Kropfen, p. 262. Müller's Archiv., 1840, p. 254.

exposed surface; as the successive layers are pushed forward and towards the surface, each cell becomes larger, drier, and flatter, and more firmly fixed to those around it. The identity of the structure of the young cells of nail and of epidermis, renders the question, whether the epidermis be continued under the nail, one of words only.

VII. CARTILAGE.[1] *True Cartilage.* The proper substance of true cartilage is a homogeneous and nearly transparent white basis, in which there are numerous small, round, oval, or flat and elongated, or sometimes angular, cavities (*cartilage corpuscles*), from 1-1000th to 1-3300th of an inch in diameter.[2] They usually seem to be mere cavities hollowed out in the basis substance; but, by long boiling, the latter is nearly dissolved, while they remain as distinct corpuscles; and sometimes a lining membrane is discernible in them.[3] They are, therefore, to be regarded as genuine cells, whose walls, during their development, have amalgamated with the intercellular substance.[4] Each such cell encloses one or more round nuclei which contain nucleoli, and sometimes are surrounded by cells, so as to give those first mentioned the character of *parent cells*, that is, of cells inclosing a second generation of cells. The secondary contained cells vary in number, and have usually the form which mutual pressure gives them as they enlarge. The nuclei are often filled by fine particles of oil, which are at first isolated, but may coalesce, and, when very numerous, may fill their cavities so as to make them look like fat cells; and when this takes place, the cavity of the primary cell also usually contains particles of oil. But in all these respects, as well as in the character of the contents of the primary cell, whether they be cells or nuclei, and in the mode in which the contained corpuscles are separated or attached to the parent cell, the varieties are manifold and as yet unexplained.

The number of the cartilage corpuscles, and the direction in which they are arranged, are more regular. In the articular cartilages they are most numerous, and smallest in the part most distant from the bone. All of them have their long axes vertical to the surface of the bone, except a thin layer of those next the joint, which are flattened and lie parallel to the articular surface. Hence it is that such a cartilage will crack vertically to near its free surface, and then tears transversely. In all other cartilages, also, most of the corpuscles are set vertically to the surfaces, but there is a superficial layer in which they are flattened and lie parallel to them. In the cartilages of the ribs, the internal corpuscles are arranged in rows which radiate from the axis.

The substance in which the corpuscles are imbedded is usually homogeneous and structureless, but in certain cartilages it gradually assumes a finely fibrous aspect, and ultimately becomes truly fibrous.[5] With these changes

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[1] According to their minute structure the parts commonly called cartilages and fibro-cartilages may be thus divided (Henle):—1. True Cartilages: the articular (with some exceptions presently mentioned), the costal, ensiform, nasal, trochlea, and those of the whole respiratory tract (with a few exceptions). 2. Fibrous Cartilages: the intervertebral ligaments, the synchondroses, the cartilage of the ear, epiglottis, and Eustachian tube, the Santorinian and Wrisbergian, the sterno-clavicular interarticular discs, and the cartilages of the inferior maxillary articulation. 3. Ligamentous discs: the interarticular ligaments of the lower jaw, wrist, and knee joints (except the sharp edges of the latter), the tarsal cartilages, the glenoid and cotyloid ligaments, and the fibro-cartilages of the sheaths and pulleys for tendons.

[2] Meckauer (De penitiori cartilaginum structurâ, Breslau, 1836.) For measurements in different specimens, see Bruns, *l. c.*, p. 215.

[3] Bruns, Allg. Anat., p. 215.

[4] See Schwann, (Mikrosk. Untersuch, &c.;) Henle, (Allgem. Anat., p. 794.)

[5] *These* fibres are not demonstrated by snapping a cartilage asunder; the fibrous

two others coincide, namely, the formation of fat in the nuclei of the cells and the acquirement of the yellowish colour in the place of the pearly blue' of young cartilage; and all these appear to be preparatory to ossification, for they are never seen in cartilages in which that change does not take place.[1]

Fibrous Cartilages. The fibrous structure of some of the cartilages just described makes the transition to the fibrous cartilages, properly so called. In these there are corpuscles similar to those in the preceding variety (except that the nuclei most commonly contain oil), but the fibres are much darker and coarser, and form the greater part of the tissue. In different examples the directions of the fibres vary: in some, as the symphysis pubis and intervertebral ligaments, they are parallel; in others, as the cartilages of the ear and epiglottis, they frequently bend, and seem as if they were matted together.

Between these fibrous cartilages and the ligamentous discs, which are usually called fibro-cartilages, there are also intermediate structures; the fibres of the fibrous cartilages are not like those of tendinous tissue; those of the ligamentous discs are. But in some examples of the former (the sterno-clavicular and inferior maxillary interarticular ligaments, for instance,) the chief substance is traversed by fasciculi of the fibrils of cellular tissue, and thus the transition is established from them to the ligamentous discs, which are composed entirely of that tissue.

VIII. Bone is composed of a basis of apparently homogeneous substance[2] (a compound of cartilage and earthy matter,) in which are densely scattered minute cavities with delicate branched canals. The cavities (or bone corpuscles,[3]) are round or oval, and flattened; they measure from about 1-2400th to 1-1680th of an inch in length, from 1-7200th to 1-4000th in breadth,[4] and are about 1-6th as thick as they are long.[5] They have somewhat jagged edges, from all parts of which there proceed fine branching canals, (calcigerous canals,[6]) which traverse the basis substance, and communicate irregularly with one another. The diameter of each canal, at its largest part, is between 1-14000th and 1-20000th of an inch; that of the smaller branches is between 1-40000th and 1-60000th.[7] Müller[8] and Henle[9] have held that the corpuscles and canals are the chief seats of the bone earth; but Mr Smee[10] has rendered it more probable that they contain no solid matter, by showing that they can be filled with Canada balsam, and that, in the bones of those who have been embalmed, they are full of a waxen material; and

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appearance of the broken surfaces, and the direction of the grain, are due to the arrangement of the cartilage corpuscles.

[1] Henle, Allgem. Anat., p. 798.

[2] An exception will presently be mentioned in which it seems to be fibrous. Dr Carpenter (Principles of Human Physiology, p. 511,) thinks that it is entirely composed of cells adherent together, and filled with a perfectly homogeneous substance.

[3] They were obscurely seen by Leuwenhoeck, (Select Works, vol. ii. p. 120), and badly figured by Mascagni, (Prodromo, Tav. x., xix.) They were first clearly discerned by Purkinje, and described by his pupil Deutsch, (De penitiori structurâ ossium, diss. inaug., Breslau, 1834.) They have since been chiefly illustrated by Müller, Miescher, Schwann, Henle, Smee, and Bruns.

[4] Miescher, (De Inflammatione Ossium, p. 42.) The measurements of Valentin, Krause, Bruns, and others are sufficiently confirmatory.

[5] Henle, Allg. Anat., p. 828.

[6] These also were discovered by Purkinje, and more clearly described by Müller.

[7] The latter from Müller, in Miescher, p. 268; the former from Krause. Both are confirmed.

[8] In Miescher, p. 268. [9] Allg. Anat., p. 829.

[10] On the Structure of normal and adventitious Bone, (Med. Gazette, Nov. 20, 1840.)

Bruns[1] has found them quite empty in calcined bones, and perfectly transparent in very thin sections. At most, therefore, the earthy matter is more thickly deposited in the walls of the corpuscles and canals than it is elsewhere.

True bone always presents these elementary structures; its coarser structure is variously arranged in different parts, but always preserves a general character of lamellæ arranged round tubes and cellular spaces. The compact structure consists of osseous laminæ from 1-5000th to 1-3000th of an inch thick,[2] firmly united in concentric tubes, or in parallel planes, accordingly as the bone is cylindrical or flat.[3] They are most distinct on the exterior of bones, for there they are rarely interrupted by the canals for blood-vessels, which more internally are interposed in great numbers between them, and send off branches which pass through them. They appear either homogeneous or pellucid, or a little granular (like ground glass), or sometimes very finely fibrous, like the fibrous portion of the second class of cartilages;[4] and this last appearance is met with especially in cartilages ossified late in life, as those of the larynx, ribs, &c.

The blood-vessels of the compact structure of bone are conveyed in long cylindrical canals (*Haversian canals*[5]), of which the chief run straight in the spaces between the laminæ. These give off small branches which pass obliquely through one or more laminæ,[6] and form communications between the longer canals in different planes, so as to make up a coarse network of bony tubes permeating the compact structure; they open externally to admit vessels from the periosteum, and internally they merge by a kind of gradual expansion into the cells of the cancellous tissue. They are usually cylindrical, and they vary in diameter from 1-200th to 1-800th of an inch,[7] those nearest the surface being three or four times smaller than those near the cancellous tissue. Their walls, which are from 1-300th to 1-400th of an inch thick, are formed by from five to fifteen concentric lamellæ[8] of bone; and thus each Haversian canal, whether its course be longitudinal or transverse, is surrounded, as the whole shaft of each cylindrical bone is, by a series of tubes arranged concentrically about its axis. The bone corpuscles lie thickly scattered, and as if compressed between the lamellæ, and are so placed that one of their largest surfaces is turned from, the other towards, the axis of the canal. The calcigerous canals run both between and through the several lamellæ; and since many of them are directed towards the axis of the Haversian canal, they look like a set of faint striæ radiating from it to the outermost lamellæ. Their apertures are discernible in small dots on

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[1] Allgem. Anat., p. 241. [2] Müller, Deutsch, &c.

[3] The microscope was hardly needed for thus deciding the question whether bones are formed of lamellæ. The evidence of old Gagliardi was conclusive. Certain diseases separate these coarser lamellæ; and after softening in acid some may be dissected from all bones.

[4] Henle, (Allg. Anat., p. 826.)—Malpighi, (Anat. Plantarum, p. 20, &c.) De Lasône, (Mém. de l'Acad. R. des Sc., 1751, p. 98,) and others described bones as formed of laminæ composed of filaments; but these were artificially-made fibres, altogether different from those which are discernible but not separable.

[5] From Clopton Havers, who described them very fancifully in his Osteologia Nova, in 1729.

[6] They form the little processes which Gagliardi (Anatome Ossium, 1689) described as nails. The accuracy of his account of the structure of bones merits something very different from the ridicule commonly attached to his name: the description of Clopton Havers, which is usually praised, is not nearly so good.

[7] Miescher, &c., 1-300th to 1-500th. Bowerbank, in Medical Gazette, Nov. 20, 1840.

[8] They are called lamellæ for distinction from the *laminæ*, just described.

each lamella, and, according to Krause[1] and Mr Smee,[2] on the anterior of the Haversian canals, into which they believe that some of them open.

Each Haversian canal contains an artery and a vein, which pass along its axis, surrounded by a very soft fat, to which they distribute minute branches. The vessels of the external canals are derived from the periosteum; those of the internal ones from the vessels of the medullary tissue; and the two sets freely anastomose.

As already said, the canals of the compact tissue gradually merge into the cells of the cancellous; and in both the type of structure is the same; for each cell also contains soft fat in which the minute branches of the medullary artery ramify, and the walls of each are formed by a series of delicate lamellæ, with corpuscles and canals arranged in the manner already described.

IX. Teeth. In no organs have the results of recent microscopic researches[3] been so unexpected or so brilliant as in these. They have revealed structures before unknown in each of the three component parts of the tooth.[4]

Cement, crusta petrosa, or *bone,* forms the outermost layer of the teeth, and in its minute structure differs in no respect from common osseous tissue.[5] It visibly surrounds the whole fang, being thickest nearest the apex and on the grooves; and Mr Nasmyth[6] has shown that it also extends in a very thin layer over the enamel of the crown. The existence of this substance which, if not always vascular, can probably easily become so, explains the possibility of engrafting teeth upon vascular tissue.[7]

Enamel invests only the crown of the teeth, and is composed of solid prisms or fibres, about 1-5600th of an inch in thickness, set side by side upright on the ivory. One end of each prism is fixed in a little depression on the rough outer surface of the ivory; the other, which is somewhat larger, is turned towards the masticating surface of the tooth in that direction which is best for resisting external force. The course of the prisms is more or less wavy, their curves being, for the most part, parallel, but sometimes opposed. Most of them reach the surface of the tooth; and where they do not, small complemental prisms fill up, like wedges, the vacancies. In the perfect state, the enamel contains a scarcely discernible quantity of animal matter, and its prisms are inseparably consolidated; but in young teeth it is soft, and may be broken up into its elements. In this early state it exhibits portions of a membranous animal substance, consisting of the cells in which each of the fibres was enveloped;[8] for the earthy matter is deposited, as it

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[1] Handbuch der Anatomie des Menschen, b. i. p. 71.

[2] Medical Gazette, *l. c.*

[3] The chief discoveries were made coincidently by Purkinje of Breslau, and Retzius of Stockholm. The former published his observations in 1835, in the dissertations of Fränkel (De penitiori dentium hum. structurâ), and of Raschkow (Meletemata circa dentium evolutionem); the latter in the Transactions of the Royal Academy of Stockholm, and afterwards in Müller's Archiv., 1837. See B. & F. M. R. viii. 158. Interesting as were the facts they revealed, they are far surpassed in importance by the application which Mr Owen, in his admirable Odontography, has made of the minute structure of the teeth as evidence in determining the general and specific relations of extant and fossil animals. It must be regretted that more use cannot be made of his work in so limited a report as this.

[4] Malpighi (Anat. Plantarum Idea, p. 19, and Op. posthuma, p. 53,) seems first to have described all the three substances. He calls the bone *materia tartarea,* the enamel *substantia filamentosa,* and the dentine or ivory *subs. ossea.* The bone was subsequently overlooked till the time of Purkinje and Retzius.

[5] Its structure also always coincides with that peculiar to the bone of each species. (Owen, *l. c.* xx.)

[6] Three Memoirs on the Teeth and Epithelium, and Med.-Chir. Trans., vol. xxii.

[7] Owen, Odontography. [8] Schwann, Ueber die Uebereinstimmung, &c., p. 113.

were, in a set of moulds, formed by the primary cells of the enamel membrane; and as it accumulates, the cell membrane is so far removed, that in the perfect tooth, no trace of it can be discerned; unless, indeed, as Retzius suggests, the fine close set transverse striæ which go round the whole or a part of each prism, indicate the remains of it.

The *Dentine* or ivory, forms the chief mass and body of the tooth. It is composed of a fibrous basis, traversed by a very fine, branching, cylindrical tubuli,[1] which run in an undulating course from the pulp cavity, on whose interior they open, towards the adjacent part of the exterior of the tooth. Each tubule in its course outwards makes two or three curves, (*primary curvatures*, Owen,) and is, besides, bent at every part into numberless minute and very close undulations, (*secondary curvatures*, Owen); but the course of those tubules, which are adjacent to each other, is as nearly as possible parallel. The chief ramifications of the tubules are dichotomous; but they also frequently give off minute branches, which, again, sending off smaller ones, fill up the spaces between the trunks. At the trunk, each tubule has an average diameter of about 1-10000th of an inch, and the distance between each two tubules is about equal to the width of three. Towards the outer surface of the ivory, the tubules and their branches are immeasurably fine, and some of them pass from the ivory into the bone, and open into the canals of its corpuscles. Both the walls and cavities of the tubules, as well as the substance between them, are filled by the earthy constituent of the ivory which lies in fine granules. The basis of the intertubular substance is composed, according to Henle,[2] of bundles of flat, pale, granular fibres, whose course is parallel to that of the tubules.

X. HAIR. Most of the hairs consist of two distinct substances; an external, cortical, hard, and fibrous part, and an internal, medullary, granular portion, on which their colour chiefly depends.[3] Moderately magnified, hairs look like empty tubes, but in fine transverse sections no central apertures can be seen.

The *cortical part* of the hair is fibrous. Very delicate longitudinal striæ may be traced on it, becoming more faint as they pass from the root to the tip, and in general invisible at a little distance from the latter. They are traceable through the whole thickness of the cortical substance to the very wall of the medullary portion, and indicate the outlines of the component fibres. The latter are, according to Henle,[4] each about 1-4000th of an inch in breadth, fat, rigid, and brittle, with dark and rough edges. But they may probably be further split, for, after maceration in hydrochloric acid, Bidder[5] found the diameter of the thickest part of a single fibre to be only 1-27000th of an inch, and Bruns[6] about 1-9000th; so that probably each of the fibres whose course is marked by the striæ is made up of several smaller ones. In some hairs, moreover, the fibres appear at certain parts, either irregularly or at definite distances, enlarged; and thus the whole shaft sometimes assumes a beaded appearance.[7]

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[1] Malpighi is commonly quoted as having noticed the tubular or fibrous structure of the ivory; but whoever will examine the places already referred to, will find that he never saw the tubules, and only discovered a coarse fibrous network, like that of which he wrongly supposed the bones to consist.

[2] Henle, Allgem., p. 856. Mr Nasmyth considers it to be cellular, (Memoirs.)

[3] The medulla is absent in the fine hair over the general surface of the body and at the very root and near the tip of all hair.

[4] Ueber die Structur und Bildung der menschlichen Haare, (Froriep's N. Notizen, April 1840, and Allgem. Anatomie.)

[5] Einige Bemerk. über Entstehung, Bau, und Leben der menschlichen Haare, (Müller's Archiv., 1840, p. 538.)

[6] *Allgem.* Anatomie, p. 204. [7] Bidder, *l. c.*

Besides these longitudinal striæ, indicating the fibrous structure of its cortical part, the surface of the hair is marked by transverse and oblique, and sometimes apparently spiral, wavy lines arranged in a very close series. Meyer[1] has shown that these are formed by the slightly projecting edges of layers of minute scales, like those of the epidermis, but much smaller, which, being closely imbricated in whorls one over the other, invest the whole surface of the hair, and form a sheath around its cortical part, extending nearly to its tip. They make the hair look as if it were irregularly *hooped* round; or rather, when the hair is very strong, as if it were a closely-jointed reed.

The *interior medullary portion* of the hair is darker than the exterior and granular. It is composed, for the most part, of very minute globules, like pigment granules or drops of oil agglomerated in small lumps. Sometimes these form one dark mass, continued along the whole shaft of the hair; but more commonly the mass seems broken up, so that there are intervals of different sizes along the axis of the shaft. These are sometimes filled by a substance like the cortical part, and the medullary matter then seems altogether deficient; but more often they are occupied by a colourless substance, clearer and softer than the exterior fibrous tissue. The diameter of this medullary part, when it is completely formed, is about 1-3d or 1-4th of that of the whole shaft; transverse sections of hairs exhibit it like a nucleus, with a clear ring around it; along its walls there are often complete pigment cells, with clear nuclei and transparent membranes.[2]

At the tip, the hair gradually becomes more and more fine, and usually ends in a rounded point, at and near which neither striæ nor medullary substance can in general be seen. At the root it rather suddenly enlarges into a funnel-shaped extremity, which Henle has named the *knob* of the hair, and which is about three times as wide as the shaft. Just before the hair begins thus to enlarge, the transverse striæ produced by the outermost layers of imbricated scales, are very distinct and broad, but they suddenly cease to be discernible. At the same part the longitudinal striæ become finer, and seem to diverge. But, in addition to these, the knob is marked by coarse, dark, longitudinal striæ, which look like short interrupted furrows, but which are produced by small, flat, metamorphosed nuclei, about 1-1200th of an inch long, and 1-18000th broad. They are largest at the upper part of the knob, and are often tortuous or connected together by fine filaments; lower down they are broader and oval or spindle-shaped, and lower still they pass into roundish or angular granules, like the nuclei of the rete Malpighii. They lie closely in a firm pellucid substance, and sometimes seem surrounded by cell membranes, among which, in dark hairs, numerous pigment granules are scattered.[3]

The *knob* of the hair and the nearest part of the shaft are pretty closely invested with a membrane, for which Henle proposes the name of the *sheath*, and of which some or the whole is pulled out when a hair is plucked from the skin. It is continuous with the epidermis, and may be regarded as the epithelium lining the hair follicle. It is composed of two layers, of which

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[1] Froriep's Notizen, 1841, and in Henle, Allgem. Anat., p. 294. Henle coincides in this view: he had formerly (Fror. Notiz., April 1840) considered the transverse striæ to be due to bands of a substance resembling the elastic tissue wound round the bundles of fibres forming the shaft; a view which closely agrees with that of Dr Barry, who believes that the hair has the same general structure as the muscular fibre, &c., and is composed of a fasciculus of flat double-spiral fibres, held together by wider coalesced spirals. Valentin (Repertorium, 1841) entirely confirms Meyer's description.

[2] Meyer, *l. c.*

[3] See also on this subject some remarks by Mr Busk, in the Microscopic Journal, vol. i. p. 26, and vol. ii.; and Simon, Müller's Archiv., 1841, and B. & F. M. R. xiii. 525.

the outer and thicker is yellowish, granular, and thickly set with superficial nuclei, the inner clear and much thinner, and perforated by numerous round, oval, and elongated apertures, but having no trace of cells or fibres. Below, the two layers are united together, and with the exterior of the knob; above, a small space filled with fatty matter intervenes between them and the exterior of that part of the shaft of the hair which is below the surface of the skin.

XI. Cellular and fibrous tissues, or fibro-cellular tissue.[1] All the tissues which have passed under these names nearly agree in their microscopic structure; their chief anatomical differences depend on the mode on which their elements are aggregated. The common material of which they are composed, consists of fine, transparent, undulating, cylindrical filaments, from 1-300000th to 1-1000th of an inch in diameter.[2] They are generally collected in fasciculi, from 1-3750th to 1-7500th of an inch wide, the filaments in which are connected by a firm, structureless cytoblastema; and the fasciculi either merely adhere together, or, as in the case of tendons and other similar tissues, dense bundles are united by others of more loosely connected filaments placed in the interstices. In different parts, either dense or loose fasciculi, or both, are woven into cords, membranes, &c.

In certain situations the elements of the fasciculi are bound together by small filaments of another kind, which, from their supposed origin, may be named *nucleus filaments*, and which Henle[3] discovered by immersing fibro-cellular tissue in acetic acid, so as to make its proper fasciculi transparent. The latter are thus seen to be severally, and sometimes collectively, constricted at pretty regular distances by one or more dark filaments, very similar to those of elastic tissue, which either wind spirally round them, or encircle them with distinct rings. This arrangement is most frequent when the fasciculi form cords; in other cases (for instance, where many fasciculi lie parallel, as in tendons and strong membranes,) similar dark filaments run, not spirally, but straight along the interspaces between each two fasciculi; and in others (in which the tissue is very lax,) the dark filaments are very numerous and run tortuously, or are even twisted up into little balls.

Other forms discerned in fibro-cellular tissue thus treated with acetic acid, are those of oval corpuscles, like dark cytoblasts, and of elongated, curved, or tortuous striæ, drawn out at their ends. The corpuscles commonly lie in rows, with their axes parallel to the proper fasciculi of the tissue; and very often they are connected by longer and more slender bodies, so as to form continuous, undulated, and spiral filaments. Henle, therefore, (to whom all the account of these fibres is due,) has little doubt that the elongated nuclei represent the early state of the dark, *spiral*, and *interstitial nucleus filaments;* and that, on the other hand, there is a regular gradation from the latter to the filaments of genuine elastic tissue; for all the transitional forms are found mixed with the proper fasciculi in different varieties of fibro-cellular tissue. Again, there is in another direction a transition from the fibro-

[1] This compound term seems preferable to either of its components. *Fibrous* and *cellular* are both terms applicable to many tissues besides this; but *fibro-cellular* may well indicate a tissue composed of fibre, which are in some cases woven so as to enclose cellular spaces.

[2] Treviranus, (Bieträge, bd. i.), Jordan, (Ueber das Gewebe der Dartos, Müll. Arch., 1834), Gerber, (Allg. Anat., p. 123), Henle, (Allg. Anat., p. 348), and many others nearly agree in these measurements. Lauth (Nouv. Manuel de l'Anatomiste, &c.,) and Krause (Handb. der Anat., bd. i.) make them much greater.

[3] The best tissue for demonstrating this is that which forms the fine fibres connecting the nerves and vessels at the base of the brain; but a similar arrangement exists in nearly every variety. See on that in the pia mater of the spinal cord, Purkinje and Luening, (Valentin's Repert., 1841.)

ellular to the muscular tissue; for though most of the organs composed of he former seem to serve passively their purpose in the economy, yet some, hough not distinguished by their structure, have more active properties nd contract under appropriate stimuli. Such are the fibro-cellular tissues f the skin and of the dartos, which, in their minute structure, exactly re-emble, on the one hand, the ordinary connecting fibro-cellular tissue, and n the other, the iris[1] and the longitudinal and circular contractile coats of eins and lymphatics, from which there is an easy gradation, both in funcion and structure, to the genuine organic muscles.

XII. Elastic tissue. (*Tissu jaune élastique.*) In the preceding section he lower forms of this tissue, of which individual fibres are connected with asciculi of fibro-cellular tissue, are described; in the higher forms of it its eculiar fibres compose independent fasciculi, with which subordinate quanities of fibro-cellular tissue are mixed.[2]

The fibres of elastic tissue resemble, in general, flat solid[3] bands of varius sizes, from 1-4700th to 1-22500th in width.[4] They are peculiarly disinguished by their sharp, smooth, dark edges, their frequent appearance f branching, their tendency to form arches or curls when their extremities re free, and their brittleness, so that they easily break into short pieces with abruptly-cut-off extremities. According to the predominant arrangenent of their fibres, Henle divides all the examples of elastic tissue into hree varieties. The first, of which the type is in the true vocal ligaments, iffers only in degree from the interstitial form of the tissue which is combined with the fibro-cellular fasciculi. Its fibres are undulated, narrow, and very rarely branched or anastomosing; they form, however, independent asciculi, which are connected by small quantities of the fibro-cellular tissue. In the second variety, which includes the ligamenta subflava, (the most perfect of all the examples of the tissue,) the fibres are large and widely arched, and frequently give off branches. In the third, including the elastic oat of the blood-vessels,[5] the fibres are of smaller size than in the second, nd very frequently anastomose so as to form, while they for the most part maintain one general direction, a network with meshes of various size.[6]

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[1] Krause, Handb., b. i. On the dartos, see Bowman, *l. c.*, who says that it contains organic muscular fibres.

[2] Henle, Allg. Anat., 399. The best previous accounts were those of Eulenberg, (De tela elastica, diss. inaug., Berol., 1836,) Schwann, (Encycl. Worterb. der Med. Wissenschaften, art. *Gefässe*,) Räuschel, (De arteriarum et venarum structurâ, diss. inaug., 1836,) and Lauth, (l'Institut, t. ii., 1834,) by whom the peculiar minute structure was first discerned.

[3] Purkinje and Räuschel (*l. c.*) believe that they are tubular, having seen a small dark spot, like a section of a canal, on transversely divided portions of the fibres, and a line of points arranged along the middle of their surfaces. The latter observation, which has been often repeated by Valentin (Repertorium, ii.) and others, may also indicate that the fibre, apparently simple, is composed of two interlacing spirals, like the muscular and others in Dr Barry's system.

[4] Henle, whose measurements are generally nearly confirmed.

[5] To be more minutely described in another section.

[6] The elastic tissue occurs in distinct fasciculi in several parts besides these mentioned as types of its various arrangements. For instance, it is found in the bands and ligaments of the larnyx and respiratory passages, in a layer surrounding the œsophagus, and in one between the muscular and mucous coats near the cardia and the anus, in the fascia lata, and several other fasciæ, where, besides the interstitial and spiral nucleus filaments, many independent fasciculi exist. In these parts the arrangement is on the plan of the first variety. Similar fasciculi, but usually arranged in networks, are found mixed in the tissue beneath the epithelium of several serous membranes, as the pleura costalis, the peritoneum on the anterior wall of the abdomen and on the fundus of the bladder, the ligaments of the liver, the

When the elastic fibres seem to branch, it is doubtful whether a single fibre really splits, or a double fibre divides into its two component parts. Valentin,[1] Lauth, and Eulenberg maintain the latter view; Schwann, Bruns,[2] Henle, and most others, the former; and they regard a genuine branching and coalescing as the peculiar characteristics of these fibres. In Dr Barry's opinion, the reticular arrangement of some of the varieties of elastic tissue, whose fibres have the same general characters as those more simply arranged, affords a striking example of the breaking up of double spiral fibres into networks, which would find a close analogy in the formation of the reticular ducts of vegetables.

XIII. Muscular Tissue. The transition in function, though not in structure, from the passive to the active fibro-cellular tissue, and from the latter to the organic muscular tissue has been already alluded to. Among the tissues of the present class there are similar gradations in regard to their several functions;[3] but by their structure they may be definitely arranged in two main divisions: the first including the muscles of organic life, which (with one exception) consist of simple, smooth filaments; and the second comprising the muscles of animal life and the heart, which consist of compound and apparently striated fibres, or tubes including fibrils.

A. *Muscles of Organic Life.* No full account of this tissue was given before that by Henle, who investigated it in his search after the properties of arteries.[4] He says that the fibres, in their most perfect form, are flat, from 1-4700th to 1-3100th of an inch broad, very clear, granular, and brittle, so that when they break they often have abruptly-rounded or square extremities. Some of them are uniform; a few bear nuclei; the majority are marked along the middle, or, more rarely, along one of the edges, either by a fine, continuous, dark streak, or by short, isolated, dark lines, or by dark points arranged in a row or scattered; and between these three kinds of marks there are such gradations as prove that they have all the same origin from nuclei. Fibres such as these are collected in divers numbers in fasciculi, upon which the dark lines just mentioned sometimes form, by branches which they give off and receive, a sort of network, and sometimes run tortously, like the nucleus fibres of the fibro-cellular tissue.

Fibres of organic muscle, such as are here described, form the proper contractile coats of the digestive canal from the middle of the œsophagus[5] to the external sphincter ani[6] of the urinary bladder, the trachea and bronchi, the

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intestines, &c. And lastly, fasciculi like those of the ligamenta subflava, are mixed with the proper tissue of many parts of the skin. (See Eulenberg, Lauth, Henle, *l.c.* and Bowman, Cycl. of Anat., art. *Mucous Membrane.*)

[1] Repertorium, bd. ii. &c. [2] Allg. Anat., p. 75.

[3] The several members of this ascending series may be thus arranged:—1. Common connecting fibro-cellular tissue. 2. The tissue of the skin contracting under the influence of cold and mental emotions. 3. The dartos, which contracts more forcibly under the same influences. 4. The contractile coats of arteries and veins. 5. The iris, which contracts when its nerves are directly irritated, and with the quickness of muscle. 6. The lower organic muscles of the gland ducts, &c.; and the higher of the stomach, urinary bladder, &c. 7. The muscle of the heart. 8. The perfect muscles of animal life. But it will be observed that the progress in structure does not coincide with this arrangement according to function. The tissue of the iris, for instance, is exactly like the lowest fibro-cellular tissue.

[4] Ueber die contractilitat der Gefässe, (Casper's Wochenschrift, Mai 1840, and B. & F. M. R., vol. x., and Allg. Anat.)

[5] On the Fibres of the Œsophagus, see the observations of Mr Gulliver, Proceed. of the Zoological Society, part viii.

[6] In the fibres of the stomach and intestines there is often an obscure division into fine rigid fibrillæ; in those of the upper part of the ureters there is an approximation to the fibro-cellular fasciculi; for they gradually split into undulated fibrils, (Henle.)

ducts of glands, the gall-bladder, the vesiculæ seminales, the pregnant uterus,[1] the arteries and the veins.[2]

B. *Muscles of Animal Life.* The voluntary muscles are composed of fleshy bundles inclosed in coverings of fibro-cellular tissue, by which each is at once connected with, and isolated from, those adjacent to it. Each bundle is again divided into smaller ones, similarly ensheathed and similarly divisible; and so on, through an uncertain number of gradations, till, just beyond the reach of the unaided eye, one arrives at the *primitive fasciculi*, or the *muscular fibres* peculiarly so called, the first fixed form in the system.[3]

1. *Structure.* The primitive fasciculi consist of tubes of delicate structureless membrane,[4] inclosing a number of filaments. They are cylindriform or prismatic,[5] with five or more sides, according to the manner in which they are compressed by adjacent fasciculi. Their breadth varies in different animals, from 1-60th to 1-1500th of an inch; in man from 1-200th to 1-500th, the average of the majority being about 1-400th.[6] Their most striking, though not constant,[7] characteristics are their pale yellow colour, and their being apparently marked by striæ, which pass transversely round them, in slightly curved or wavy parallel lines, from 1-10000th to 1-12000th of an inch[8] apart. Other, but generally more obscure, striæ also pass longitudinally over the tubes, and indicate the size and direction of the filaments, or primitive fibrillæ, of which the primitive fasciculus is composed.[9]

The *primitive fibrils* are the proper contractile tissue of the muscle. Each of them is cylindriform, but somewhat flattened, and about 1-18000th of an inch in its greatest thickness.[10] They are marked by transverse impressions, which are at exactly the same distance apart as the striæ on the surface of the fasciculus. Hence it is generally concluded that, as Fontana believed, the striated appearance of the primitive fasciculi is produced by the filaments being so apposed that the transverse marks on all those near the surface lie at exactly the same levels.[11] At present there is much question of the true

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[1] Schwann (Mikrosk. Unters, p. 167), Lauth (Müll. Arch. 1835, Jahresb. p. 3), and Baly, in Müller's Physiology. On those of the unimpregnated uterus, which resemble the undeveloped muscular fibres of the embryo, see Purkinje and Kasper, Froriep's N. Notiz. Marz 1842.

[2] See further, p. 266.

[3] They were first described by Hooke, in 1678. The account of them became gradually more accurate in the successive descriptions of Leuwenhoeck, Muys, Fontana, and Prochaska.

[4] Valentin, (Hecker's Annalen, 1835); Schwann, (Mikrosk. Unters.) It is the sarcolemma of Mr Bowman, (Philos. Trans. 1840,) whose complete description of it is generally confirmed by Henle, (Allg. Anat., p. 579.) The latter, however, adds that it is often absent; and that, when present, it bears numerous elongated nuclei like those on the fasciculi of organic muscle.

[5] Muys, (Musculorum Artificiosa Fabrica, pl. i.;) Prochaska, (De Carne Musculari, p. 45;) Bowman, (*l. c.* pl. xvi. fig. 1, &c.)

[6] Bowman, (*l. c.*, p. 460.) These measurements are generally confirmed by those of Raspail, Schwann, Skey, Henle, and others.

[7] See Gulliver in Gerber, p. 235. See also Martin Barry, (Proceedings of the Royal Society, Jan. 6, 1842.)

[8] Schwann, in Müller's Physiologie, bd. ii. p. 33. Nearly confirmed by Prevost and Dumas, Lauth, Bowman, and others.

[9] Exceptions to these general characters are met with sometimes, but are not yet explained. See especially Gulliver, (*l. c.*,) and Henle, (Allg. Anat. p. 580.)

[10] The measurements of Henle, Lauth, Ficinus, Bruns, and several others, pretty nearly agree with this statement.

[11] Dr Barry, however, (Proceed. of Roy. Soc., Jan. 6, 1842,) says, there are states in which the fibrillæ have no share in the appearance of transverse striæ, and in which they are due to the flat and grooved filaments, which, he believes, are wound spirally and interlaced around the bundles of fibrillæ. Some of Henle's observations

structure of the fibrils, and of the source of their seeming constrictions, or transverse impressions. Some, indeed, have denied the existence of such constrictions, except when the muscle is contracted, or in some particular condition after death;[1] but the majority differ only in their explanation of them. Some believe that the fibrils are rows of corpuscles, or discs, connected by a homogeneous transparent substance,[2] and others, following Dr Barry,[3] regard the fibrils as a peculiar form of his grooved and compound filament; each being computed of two spiral threads, opened in opposite directions, and interlacing. In the former view, the transverse marks on the fibrils, and the ordinary striæ on the fasciculus correspond to the spaces between the discs; in the latter to the spaces between each two successive turns of one of the spiral threads; for since each filament has its edge turned outwards, only one set of coils can at first be seen.

Each primitive fasciculus contains several hundred of the fibrils; and when fully formed they fill all the cavity of the sarcolemma with the exception of very small interspaces, which seem occupied by a glutinous pellucid fluid.[4] It is only in immature fasciculi that there is an appearance of a central cavity, which is filled either by fluid or by minute granules.[5]

Where a muscle is affixed to a tendon, each primitive fasciculus of the former terminates in an abruptly rounded extremity, which is embraced by a fasciculus of tendinous fibrils, expanding and enclosing it as in a sheath.[6] The coarser fasciculi of tendinous filaments are also continuous with the fibro-cellular tissue which intervenes between the secondary fasciculi of the muscle.

2. *Action.* The actual phenomena of muscular contraction have been often examined in both the voluntary and the involuntary muscles, but the mode in which it is effected is still disputed. Hales,[7] and after him Prevost and Dumas,[8] described the contraction as the result of the primitive fasciculi being thrown into zig-zag lines. But the view of others, (which has been especially illustrated by Mr Bowman[9]) is that the change is effected by an approximation of the constituent parts of the fibrils (whether discs or coils) which, at the instant of contraction, without any alteration in their general direction, become closer, flatter, and wider; a condition which is rendered evident by the approximation of the transverse striæ seen on the surface of the fasciculus, and by its increased breadth and thickness. The appearance of zig-zag lines is referred by Dr Allen Thomson and Mr Bowman, to the relaxation of a fibre which has been recently contracted, and is not at once stretched again by some antagonist fibre, or whose extremities are kept close

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are strongly confirmatory of this view (Allg. Anat., p. 583); and perhaps Mandl's account (Anat. Microsc., p. 14,) is drawn from a similar appearance.

[1] Treviranus, (Beiträge, bd. ii.;) Ficinus (De Fibræ muscularis forma et structura;) Valentin, (De Functionibus Nervorum;) Skey, (Phil. Trans., 1837.)

[2] For examples (each, however, with some modification), Lauth, Krause, Turpin, Schwann, Müller, Bowman, Bruns, and Gerber.

[3] *L. c.*, and Philosophical Magazine, April 1842. Henle (Allgem. Anat., p. 582,) confesses it impossible to decide the question, but he seems to think that the fibrils are not composed of rows of globules, but derive that appearance from being finely wrinkled. Fontana, also, (Sur le Venin de la Vipere, t. ii. p. 229,) remarked that the appearance seemed due sometimes to rows of globules, and at others to the mere wrinkling of cylinders.

[4] Skey, Bowman, Henle.

[5] Valentin, Skey, Gerber, Henle.

[6] Valentin, Bowman, Bruns, &c.

[7] Statical Essays, vol. ii. p. 59.

[8] Mém. sur la Phénomènes qui accomp. . . . de la Fibre musculaire. (Magendie's Journal, vol. iii. p. 301.)

[9] Phil. Trans., 1840 and 1841. See also Owen and Allen Thomson, in Hunter's Works, by Palmer, vol. iv. p. 261, note; and Martin Barry, *l. c.*

together by the contractions of other fibres. Valentin[1] adopts a middle course of explanation, believing that the production of inflexions in the fibres depends on the degree of their contraction. Ordinary and moderate muscular contraction, he says, is effected by a vermiculation passing very rapidly over the whole length of the fibre, and in this act, the transverse striæ are approximated; but when the contraction is greater, geniculate (zig-zag) inflexions are produced, and become the more acute and close the more violent the contraction. All agree in the account of the contraction commencing either at the extremity or at several intermediate parts of a fasciculus, and thence travelling over its whole length; so that the entire act is rather a succession of contractions and dilatations than a single contraction.[2]

In relation to the question of the connection between the muscular contractility and the nervous influence, the following observation by Valentin may be recorded, but perhaps should not be built upon without much caution.[3] He galvanized on the field of the microscope several minute portions of muscle, and observed whether they contracted or not, which it was possible to do with a moderately high power. Then, with a much higher, he examined whether, in each portion of muscle, there were any portion of nervous fibre included; and he found that in every case in which nerve was present contraction took place, but that when the portion of muscle contained no nervous fibre, the galvanism was ineffectual to produce the same result.—*British and Foreign Med. Rev.*, July 1842.

(To be continued.)

On the Physiological and Medicinal Properties of Bromine and its Compounds; also on the Analogies between the Physiological and Medicinal Properties of these Bodies and those of Chlorine and Iodine with their correspondent Compounds; being the Harveian Prize Essay for 1842. By Dr R. M. Glover, Newcastle-on-Tyne.

The author commences by remarking, that the class of bodies which he proposes to investigate, is interesting from the analogies which many of the bodies bear to well-known medicinal agents. "Hence a more complete investigation than has yet been recorded of the physiological and medicinal properties of bromine, and of the mode in which they are affected by combination of the element, with other bodies, must appear likely, besides the more particular results, to contribute to the solution of a problem of the highest interest, viz. the extent to which the chemical analogies of bodies are accompanied by analogy of action on the living system."

In studying the relation between the physiological and chemical properties of bodies, he prefers to take into account their broad chemical relations, rather than their relations as to crystalline form alone, remarking, that if, according to Mr Blake, the physiological properties of bases are but little modified by combination with the strongest acids, this circumstance is in opposition to the isomorphism of groups being traced by the *acid* as well as by the *base*.

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[1] De Functionibus Nervorum, p. 132. His observations were chiefly made by galvanising portions of muscle on the field of the microscope.

[2] On the application of this to ruptures of muscles, see Mr Bowman's paper, in the Phil. Trans. 1841.

[3] And the more since it has not been confirmed, and Mr Bowman says that in his experiments fibrils contracted after, as he believed, all adjacent tissues were completely removed. It is possible, however, that these were such spurious contractions as, according to Valentin, are produced merely by the action of water.

He then endeavours to show, by an extensive collection of chemical analogies, that bromine resembles chlorine chemically, rather than iodine.

The action of bromine on albumen is somewhat minutely entered on. The author prefers regarding this action as the conversion of bromine into hydrobromic and bromic acids, the albumen serving as a base; and that afterwards by simple washing, these acids are separated, and mutually decompose each other, a solution of hydrobromic acid, containing a little albumen in solution, passing the filter. He finds that hydrobromic acid can dissolve albumen as hydrochloric acid does, forming a deep-coloured solution. This is a singular property of the hydracids.

The death of birds produced by dropping bromine on their bills, he ascribes not to any operation of the poison on the nervous system, but to the inhalation of the fumes. The convulsions which occur when bromine is injected into the jugular of dogs, are ascribed by him to the sudden compression of the nervous centres, arising from the obstruction produced to the flow of blood through the right side of the heart and lungs. To the same cause he ascribes a remarkable hemorrhage from the stomach of a dog, produced by injecting bromine into the jugular.

"Two series of effects are produced by the introduction of bromine in large doses into the stomach. We have the action due to volatilized bromine getting into the fauces and air passages, and so into the lungs, and the corrosive and irritant action on the stomach and intestines. Another series of effects might be due to the entrance of bromine into the circulation. To the first series must be referred the coryza, sneezing, salivation, and affection of the respiration. The solution of a great part of the stomach in the seventh experiment, may be accounted for by supposing, that after a time, the stomach became unable to transmit its contents into the duodenum, when the bromine remaining in the organ becoming converted into hydrobromic acid, dissolved the coats. The intestines being not so well adapted for the lodgement of the poison, the appearance they presented differed from that of the stomach, being the effect of the element, and not of the hydracid. An experiment will be afterwards detailed, in which it will be found that hydriodic acid dissolves a portion of the stomach. The peculiar blue colour appears characteristic of the action of the hydracids on this organ, and resembles the appearance of the stomach, showing the action of the gastric juice after death, as given in Carswell's plates."

He then proceeds to prove the absorption of hydrobromic acid, when pure bromine is given into the stomach of a dog; and states in a note, that this was ascertained before the 1st of January 1842; consequently prior to the publication of Orfila's memoirs on the absorption of the mineral acids administered in a concentrated form, "chlorine and sulphuretted hydrogen pass into the urine, also arsenious acid, and I shall afterwards bring forward evidence of the absorption of the acid bichloride of mercury. The hydracids of chlorine, bromine, and iodine, are peculiarly liable to be absorbed, since the two former form soluble compounds with albumen, and we may assume as much of the other."

In a note, he attributes the absorption of the oxacids to the solubility of the compounds which they form with albumen in a large quantity of water. "The absorption of corrosive sublimate is explained by its compound with albumen being soluble in solution of the electro-positive chlorides."

"Bromine is more irritant when diluted, than when pure. It is an irritant, independent of its corrosive action; the effects of chlorine and iodine introduced into the stomach of rabbits, closely resemble those produced by bromine, taking into account certain modifying circumstances."

In an experiment where solution of bromine was given to a dog, and the penis tied, the poison was found in the urine on the ligature being untied, half an hour after administration.

Dr G. decides that bromine has no proper cumulative action, which is per-

haps owing to the greater energy of its primary action, in comparison with that of iodine, and its speedy operation on the skin and kidneys. The primary physiological action due to the introduction of bromine into the stomach is fully shown in the paper.

The best test for bromine, in the form of hydrobromic acid, is, according to this author, the chloride of gold. "When bromine exists in an organic mixture, since it is more apt to be in a state of combination, caustic potass should be added to the mass, which should then be reduced to an ash, exhausted by distilled water, and chlorine passed through the solution, or the chloride of gold added to it, previously neutralized by hydrochloric acid. When chlorine is used, starch may render the presence of the element more perceptible." Antidotes—starch and white of egg. We have next a series of experiments with hydrobromic acid:—"These experiments show that hydrobromic acid is less powerfully corrosive and irritant than the element. The last experiment confirms the statement made some pages back with regard to the capability of hydrobromic acid to dissolve the coats of the stomach. A comparison between experiments fourth and nineteenth will show that hydrobromic acid, introduced into the blood, is less energetic than bromine."

Dr Buchanan maintains, that all the beneficial effects due to the administration of iodine, are owing to the conversion of the element into hydriodic acid, which passes into the system, and that the primary irritant action is due to the element alone. In the rabbit poisoned by hydriodic acid, Dr G. found that the iodine was retained in the tissues by a base, since they could be charred, and the iodine detected in them, without the necessity of having recourse to caustic potass. According to Rees, the iodine is sometimes converted into iodic acid in the system, which is according to the view Dr G. has given of the action of bromine on albumen, to which that of iodine corresponds, as he has ascertained, though this latter action is of a more feeble character. The suspected existence of iodate of potass in the urine, where the hydriodate has been taken internally, may receive some elucidation from facts which Dr G. shall afterwards bring forward, tending to show that the activity of salts depends in great part on the facility with which they undergo decomposition in the system. Dr Glover places bromine nearer chlorine in its physiological relations, than to iodine.—Abridged from *Edin. Med. and Surg. Journal* for July 1842.

On the Organization of the Spleen. By M. Bourgay.

A paper on this subject was read before the Academy of Sciences, on the 25th of April last. According to M. Bourgay, the spleen is composed of a vesicular and glandular apparatus, the former filled with venous blood. In a portion of spleen, which we may represent by No. 6, the vesicular structure occupies three, and the glandular two parts, while the remaining part consists of cellular tissue, and vascular ramifications. All the vesicles are attached to each other in a row, and communicate by means of openings in their contiguous parietes, so that the vesicular apparatus composed of heads of vesicles, has the appearance of a long tube with innumerable sinuosities. The glandular apparatus, again, is formed by numerous glandules, united by small vessels, and separated by the folds of the vesicular tube. In short, the spleen is a large lymphatic gland.—*L'Examinateur Méd.*, 1st May 1842.

Normal Dimensions of the Heart in the Adult. By Dr Ranking.

The author gives an account of a plan of measurement which he adopted, which seems to have been one calculated to ensure accuracy. Of upwards of

100 hearts of which the dimensions were taken, care was taken to exclude every one which exhibited any trace of organic change. We shall only give the mean measurements.

Of fifteen male hearts, the mean *circumference* was 9 inches, 27-48ths; of seventeen female hearts, 8 inches, 16-48ths.

The mean *length* of the male heart was 4 inches, 16-48ths; of the female, 4 inches 36-48ths.

The mean *thickness* of the *left* ventricle in the male, was 27-48ths of an inch; in the female, 23-48ths. Of the *right* ventricle, in the male, 8-48ths of an inch; in the female, 6-48ths.

The septum ventriculorum has, in the male, a mean thickness of 22-48ths of an inch; in the female, 14-48ths.

The aortic orifice in the male has a mean circumference of 2 inches 31-48ths; in the female, 2 inches 22-48ths.

In the male, the pulmonary artery at its origin has a mean circumference of 2 inches 34-48ths; the right auriculo-ventricular orifice, 4 inches 35-48ths; the left auriculo-ventricular orifice, 3 inches 45-48ths; and the corresponding parts in the female are relatively less.

The following are the author's deductions:—1*st*, The male is larger than the female heart. 2*d*, The length of the healthy heart to its circumference is rather less than 1 to 2. 3*d*, The thickness of the right ventricular parietes to the left is nearly as 1 to 3. 4*th*, The pulmonary artery is slightly wider than the aorta. 5*th*, The right auriculo-ventricular orifice is considerably larger than the left.—*Medical Gazette*, No. xxiv. 1842; as abridged in *B. and F. Med. Review*, July 1842.

On the Period of Puberty in Negro Women. By John Roberton, late Senior Surgeon in Ordinary to the Manchester Lying in Hospital.

In a paper on the natural history of puberty in the female sex, in the different races of mankind, published in the *Edinburgh Medical and Surgical Journal*, vol. xxxviii., I attempted to show that we possess no credible evidence that puberty is earlier in hot than in cold and temperate climates. In the present essay, my remarks are confined to a single race of mankind,—*the negro*,—respecting whose anatomy and physiology in general there has long been controversy, and concerning no particular more than with respect to the age at which the female reaches puberty. I was advised to apply to the two superintendents of the Moravian missions in the islands of Antigua and Jamaica, as they had had for a long period registers of births kept at their mission stations, whereby these intelligent men would be able to furnish facts concerning the age of puberty more to be depended on than those of missionaries destitute of such records. In November 1841 I received the following communication from Mr Elliot, Jamaica:—

"New Carmel, Jamaica, *Oct.* 18, 1841.

"The table on the first page of this sheet, I trust, will be useful to you in the investigation and promulgation of the subject mentioned in your communication of June 8th this year. I could have added many cases of negresses from eight to eleven years of age, in whom there is as yet no menstrual appearance. I believe you may rely on the accuracy of those you now receive. Wishing you and all who feel an interest in the too long degraded, traduced, and oppressed children of Africa, the divine blessing,—I am, &c.

Number of Negresses.	Age at present.	Age when the menses first appeared.	Whether the name be in register or not.
1	16	13	These seven names are not in our register, but have been kindly supplied by a proprietor, in whose estate's book they are registered, and whose accuracy may be depended upon.
2	36	15	
3	21	14	
4	46	14	
5	50	16	
6	22	14	
7	21	12	
8	22	15	In our register.
9	16	13	do.
10	16	15	do.
11	12	12	do.
12	13	Not yet.	do.
13	11	do.	do.
14	13	do.	do.
15	13	13	do.
16	14	Not yet.	do.
17	12	do.	do.
18	10	do.	do.
19	8	do.	do.
20	9	do.	do.
21	8	do.	do.

This table supplies evidence as to the age of puberty in the negress, both of a positive and negative kind. The positive evidence rests on twelve cases in which the menses appeared, in one aged sixteen years, in three fifteen, in three fourteen, in three thirteen, and in two aged twelve years; and the negative evidence rests on nine cases in which menstruation had not commenced, viz. in one aged fourteen, two thirteen, one twelve, one eleven, one ten, one nine, and two aged eight years. There is, we have seen, this further information in the letter, "I could have added many cases of negresses from eight to eleven years of age in whom there is as yet no menstrual appearance."

Five months subsequently, namely, in April 1842, I received another communication from Mr Elliott, inclosing a second table, the facts in which were collected not by himself but by another missionary. Mr Elliott writes, "I brought the subject of your request before the Rev. Mr Zorn, the president of our mission in this island, and (inclosed) transmit you the result of his inquiries, which, I have no doubt, will prove satisfactory, though not exactly according to your prescribed form."

It is evident from Mr Zorn's document that he has not fully apprehended the drift of my inquiries; a circumstance which, although it has rendered his replies in a number of instances incomplete, or rather of little or no use, does not impair the great value of the remainder. The document is headed "Extracts from Church Book;" and these extracts are arranged in a tabular form in four columns. The first column furnishes the numbers of the names as they stand in the Church Book; the second the initials of the names; the third the dates of baptism, and the fourth column "whether or not they have menstruated in December 1841." At the foot of the table is this note signed by Mr Zorn: "The above forty-two (instances) were taken as I could get information, without any design but truth. The idea of any (menstruating) younger than the above (under twelve years) was ridiculed by nurses. The date is of baptism, and a few may be a year or two old at baptism; the great majority, especially of the younger ones, were baptised in infancy."

The results afforded by Mr Zorn's table, assuming that the year of baptism may stand for the year of birth, and we learn it does not in every instance, may be thus summed up:—

One negress, baptised December 1827, menstruated first in November 1841, that is in her fourteenth year.

Fourteen[1] negresses, seven of whom were in their nineteenth year, one in the eighteenth, four in the seventeenth, and two in the fourteenth year, were found to have menstruated December 1841, that is to say, had passed the period of puberty; how long past it does not appear from Mr Zorn's table. The consequence is, no idea can be obtained as to the precise age of puberty in these fourteen cases.

Twenty-seven negresses had not yet reached the period of puberty as shown by the natural sign, menstruation, whose ages, December 1841, were:—one in her twentieth year, stated as "healthy"; six in the sixteenth; seven in the fifteenth; five in the fourteenth; five in the thirteenth; and one in the twelfth year: in all twenty-seven.

Of positive evidence as to the age of puberty in the negress, Mr Zorn furnishes one case where the individual first menstruated in the fourteenth year of her age; and of negative evidence, a body of twenty-seven cases, the particulars of which it will not be necessary for me to recapitulate, only I may remark that negative evidence, provided the females are healthy, and there is no reason to doubt of there being so in the present instance, is to the full as valuable and conclusive as any positive evidence whatever.

From Mr Harvey, island of Antigua, I had an answer, inclosing the following letter addressed to him by Dr Thomas Nicholson.

St John's, *December* 1, 1841.

"I am very sorry that I have failed in my attempt to procure the information Mr Roberton desires, and which I believed, and led you to expect I should have been able to obtain with the utmost facility. My disappointment has been occasioned by various causes. In the first place, the records of births which, previous to emancipation, were accurately kept in every estate, have been lost or destroyed since 1834, and therefore it is no easy matter to ascertain the ages of young females of that class. With the assistance of the ministers and baptismal registers, I believe this obstacle might have been overcome, had not another of still greater importance occurred, which I have as yet been unable to remove. When I began my inquiries I stated, perhaps imprudently, but for the purpose of satisfying them of the purity of my motives, that the information sought was required by one of their ministers who was much interested in their welfare. To this circumstance I attribute chiefly my complete failure. They began to suspect that my object was to discover their immoral practices, which I am sorry to say I have reason to believe, are begun at a very early age, long before the natural signs of puberty are developed. The mothers either denied all knowledge on the subject, or gave such answers as convinced me that no dependence could be placed in any thing they said. At present, therefore, Mr Roberton must be content with the bare result of my experience, derived from upwards of nineteen years' practice in this island; and although I possess no written record of individual cases, I consider the general result to be as accurate, as if it had been drawn from documents of a more authentic appearance.

"*First*, I have never met with a case of menstruation before the twelfth year, either in whites or blacks; but I have met with a few cases at that age, both in whites and blacks, and in the mixed race. That such cases are rare is proved by the fact of my having been consulted professionally on account of that circumstance.

"*Secondly*, Menstruation commences most frequently in the fourteenth or fifteenth years; and I know no difference in this respect between the whites and blacks; but cases of tardy menstruation from chlorosis, are more

[1] One is stated as being a mulatto; also of these fourteen, one negress in the eighteenth, and two in the sixteenth year of age, are said to have each "one child."

frequent with the latter: this I do not attribute to any constitutional difference existing in these races, but to local causes affecting the individual, such as miasmal effluvia, to which the blacks are more exposed. In such situations the young males are subject to a disease termed Mal d' Estomac, the pathology of which is similar to chlorosis.

Thirdly, I have never met with a case of pregnancy occurring before menstruation had appeared, but I have been told that such has been the case in this island; and I met lately with two cases in which the first conception took place whilst the patients were labouring under suppression of the catamenia.

"*Fourthly*, A regular monthly discharge during pregnancy, in every respect resembling the catamenia, is not an unfrequent occurrence in this island, particularly with the whites of a sanguine temperament.—I remain, my dear Sir, yours very sincerely, THO. NICHOLSON."

This able and valuable letter, and the still more valuable tables from Jamaica, the facts and opinions, though derived from three independent sources, agreeing in a remarkable manner, call for no further comment or explanation. I venture to hope that the evidence they supply will be thought sufficient to settle this long disputed point regarding the supposed earlier maturity of negro as compared with white women—to settle it for ever in the negative, or, let me say, till opened afresh by the authority of well-ascertained facts. At the same time, this evidence may help to cast doubt on other popular notions of a similar kind, as that the sexual feelings are naturally less under control in warm countries than in our own; that the intellect of the dark varieties is naturally inferior to ours, and many more, which, while they are little creditable to the good sense of those who entertain them, in the absence of all proof whatever, exercise an evil influence on public opinion in our varied relations and intercourse with and treatment of the coloured races in our colonies. For, how trifling soever erroneous opinions such as these may appear to be, when viewed apart from their consequences, every one read in the history of European intercourse with intertropical nations knows, that their influence with reference to whites and blacks alike has been, in more ways than one, extremely pernicious.

In conclusion, I may be permitted to allude to the vague notions still existing both in and out of the medical profession, as to the effects of certain mental and physical circumstances in hastening or retarding puberty in the whites of Europe; for example, that working in heated factories accelerates it,—that the state of manners which exists in populous cities has a similar effect,—and that it is later in women of the peasantry than in the inhabitants of cities, especially the higher orders. If all this be true, where is the evidence? I believe it is yet to be collected. With regard to the alleged forcing effects of cotton factories on the female constitution, I can testify from inquiry that it is destitute of truth.—Abridged from *Edin. Med. and Surg. Journal*, July 1842.

PRACTICE OF PHYSIC AND PATHOLOGY.

DISEASE OF THE KIDNEY. BY DR BARLOW.

Dr Barlow has narrated a series of interesting cases illustrative of the following points:—First, that there is a certain symptom connected with irritation of the kidney, and which, although not confined to it alone, is not necessarily connected with disease of those structures whose affections are most likely to be confounded with those of the kidneys, so that when this

symptom is absent, we may eliminate, and thereby disembarrass ourselves of the consideration of all such affections of the kidneys as would necessarily be attended by irritation of that organ; and when this symptom is present, we are furnished with a reason for assigning the seat of the disease to the kidney, in preference to several adjacent structures. The symptom is sickness, or irritability of stomach.

Secondly, and further, there is a certain symptom, or rather, set of symtoms, dependent on the non-depuration of the blood by the kidney, whether this non-depuration be the result of mechanical obstruction to the flow of the urine, of a diminution in its quantity, or of a depraved condition of that secretion, in which its most important ingredients are wanting, viz. cerebral disorder of a peculiar character.

There are, however, several affections of the kidney which do not necessarily give rise to irritation of that organ, and in which the sickness *may* not be present to aid our diagnosis; of these, the principal are the granular degeneration, suppuration, and perhaps some forms of adventitious or malignant deposit.

In the first of these, the disease, depending in the first place probably upon congestion, and afterwards upon a chronic change in the structure of the organ, irritation is not a necessary concomitant, although the disease may, and no doubt frequently does, result from irritation, giving rise to chronic inflammation; accordingly, we find that sickness is not always present, although it is sometimes a most troublesome symptom. In suppuration we should generally have irritation, giving rise to sickness, in the first instance, and probably at a later period, obstructed function, with its concomitant changes in the urine, and cerebral disorder, with probably, at some time, the presence of pus in the urine.

With regard to malignant disease, it is very probable that this deposit taking place, as has been remarked by Dr Bright, in the cellular membrane connecting the firm parts of various structures, the parts of the organ in which this deposit takes place may be, as it were, pushed aside, without suffering any mechanical violence or functional disturbance; at the same time, it is also probable that, in the progress of distension to which this organ is subjected, some slight laceration, or irregular pressure, giving rise to irritation, will sooner or later occur, and accordingly some sudden invasion of sickness almost uniformly happens before such deposit in the kidney has produced a tumour of any considerable size. We should also, in this case, probably, have some degree of hæmaturia, especially if the disease be of a fungoid character, the most common form of malignant deposit in the kidney.

Irritability of the stomach is not regarded as pathognomonic of disease of the kidney; but in cases where doubts arise as to whether any disease is to be referred to the kidney, or some neighbouring organ, the absence or presence of sickness will go far to decide the question; and, further, in cases not unfrequently met with, where the prominent symptom is distressing and obstinate sickness without any assignable cause, especial attention should be directed to the kidneys, and every means used to determine the state of those organs. The same observations will apply very nearly to the second class of symptoms—namely, the cerebral disorder; for as yet we want sufficient evidence to prove that similar derangement of the functions of the brain may not be produced by other causes. The cases narrated are nine in number.—*Guy's Hospital Reports*, as abridged in *Prov. Med. Journal*, July 2, 1842.

USE OF PURGATIVES IN THE TYPHUS FEVER OF PARIS.

In the course of 1839, M. Andral determined to try the effect of repeated purgation in typhus fever. 47 patients were submitted to this treatment, of whom 12 were suffering from a mild form of the disease, 21 had a more se-

vere attack, and the remaining 14 were affected with typhus gravior; of these latter, 6 died. Of these 47 cases, 29 were men, 18 women, and all were young, with the almost solitary exception of one patient, aged 36, and another, 42. The attack could not be traced in any case to either hygienic or occasional causes, save in two or three instances, where it was attributed to cold, in one, to a journey on foot from Calais to Paris, and in another to a severe fright. The average day of admission into the hospital was the eighth day of the fever. In every case, symptoms of affection of the abdominal viscera were present, and not one was regarded as typhoid fever, unless ileo-cœcal pain, increased on pressure, was discovered. Rosaceous, lenticular spots showed themselves in 23 cases—1 in the first list of 12 mild cases, 12 in the second list of the 21 more severe, and 10 in the third list of 14 of typhus gravior. Sudamina occurred in only 11 cases,—5 of the second list, and 6 of the third. Intestinal hemorrhage did not show itself in any instance. Pulmonary symptoms appeared in all save 13, of which exceptions 7 were of the first list, 5 of the second, and 1 of the third. In 12 cases, intense bronchitis formed a complication of the fever, 9 of the patients being in the second list, and 3 in the third. The three last mentioned had pneumonia, ending in acute tubercular degeneration. The heat of the skin, measured in every case daily by a thermometer in the arm-pit, never exceeded 104°, nor fell less than 99° Fahrenheit. Erysipelas of the face occurred in 2 cases of the third list, and probably hastened the fatal termination; in 1 case, intestinal perforation took place, and another presented all its symptoms. The typhoid fever was changed in one instance into an intermittent, which was cured by sulphate of quinine. Of the 12 cases of the first list, 1 was entirely unaccompanied by nervous symptoms; in another, pains of the limbs and joints were complained of; of the second list, 1 case of pains in the limbs and joints, 1 of ataxia with delirium, and 1 attended with adynamic symptoms; in the third list, there were 2 cases of the ataxic form, 1 accompanied with violent convulsions, 7 of the adynamic form, and 3 of the ataxo-adynamic variety. The average duration of the disease in the first list was 12½ days, in the second 17 days, and in the third 26½ days, for the 8 cases cured; while of the 6 that died, one case terminated in 6 days, one in 9, one in 11, one in 28, one in 40, and one in 58 days. Convalescence was more prolonged, and the patient more liable to relapses, in the more severe cases than in those which were slighter.

The mode of treatment was the same in all the 47 cases. The day after the patient was admitted into the hospital, whether the attack was serious or slight, an emeto-cathartic of two grains of tartarised antimony was administered, which generally produced both emesis and catharsis; the next and following days, without interval, purgatives were ordered, and continued as long as febrile symptoms were present, at least until 16, 17, or 18 doses had been taken, when their employment was abandoned. The purgative used was almost exclusively the Seidlitz water, one bottle, containing 30 scruples of sulphate of magnesia, being given each day; towards the end of the treatment, when the action of the purgative seemed almost null, 45 scruples were given. Occasionally 60 scruples of castor oil, or 12 grains of calomel, divided into two or three doses, the last being followed an hour afterwards by a glass of Seidlitz water, was had recourse to. A senna draught was sometimes given also. The number of purgatives employed was as follows:—In the first list of 12 cases, one case, 3 purgatives; six cases, 4; three cases, 5; two cases, 6; the average quantity being 4½ purgatives. The duration of the fever in the hospital, from the day of admission to its removal, was in six cases, 4 days, in three cases, 5 days, in one, 6 days, in one, 8 days, in one, 9 days; the average being 5 days, the total average duration of the febrile attack being 12½ days. In the second list of 21 cases, more severe, the purgatives were employed as follows:—In two cases, 4 purgatives; in one, 5; in two, 6; in seven, 7; in four, 8; in two, 10; in two, 11; in one, 12; the average num-

ber was 8. The duration of the fever in the hospital, from the day of admission to its removal, was, in one case, 4 days; in one, 6; in five, 7; in four, 8; in four, 11; in three, 12; in one, 13; in one, 15; in one, 16: the average duration was 10 days, the total average duration having been 17. In the third list of 14 most serious cases, of which 6 died, the 8 cases of cure will be considered first. In two cases, 11 purgatives were employed; in two, 12; in two, 14; and in two, 16. In the cases which terminated fatally, in two cases, 3 purgatives were ordered; in one, 7; in one, 10; in one, 14; and in one, 21: the average number was 13 purgatives for the cases which were cured, and 10 for those which died. The duration of the disease in the hospital was undetermined in one case; in one, 13 days; in one, 15; in one, 17; in one, 20; in one, 24; in one, 27; and in one, 29: the average duration was 20 days, the total average duration being 26⅓. In the fatal cases, the duration in the hospital was in two cases, 4 days; in one, 10; in one, 11; in one, 35; and in one, 52; the average being 19 days. As a general result, we have one fatal case out of every eight of well-marked typhus fever, the diagnosis of which cannot be called in question—a result which, in the opinion of M. Becquerel, the reporter, is favourable to the use of purgatives, more especially as these were not picked cases, but taken at hazard from the wards of La Charité, in the course of six months.

The use of purgatives in cases where constipation existed caused diarrhœa, which continued during a part of the whole of the disease. The tongue generally got clean while they were employed, but little advantage resulted when the tongue was dry, reddish, and furred. When that organ was very dry, they were omitted for a time, and resumed afterwards. When diarrhœa existed before purgatives were had recourse to, it was found to be increased the first day only, when it was generally accompanied with bilious vomiting, that being the day for the emeto-cathartic. The stools were rarely increased in quantity or frequency by the aperients, which never caused any intestinal hemorrhage. Pain in the abdomen, and especially in the ileo-cœcal region, did not appear to be much influenced by them, nor were the pulmonary symptoms either. The duration of the complaint did not appear to be shortened by their use, but the fever never increased in intensity, and sometimes it was evidently lessened. In a word, the influence of the purgatives in very serious cases, seems to have been null, while in those less severe, but still very dangerous, and in others still milder, it appears to have lessened the febrile excitement, and the symptoms seem to have diminished in severity as the aperients were repeated. The complaint, therefore, is rendered less serious, and in the most dangerous cases no injury did accrue from their use.—*Bulletin de Thérapeutique*, as abridged in *Prov. Med. Journal*, July 2, 1842.

Belladonna in Epilepsy. By Dr Debreyne.

Dr Debreyne, lecturer on practical medicine at La Grande Trappe, Orne, has published a *resumé* of his experience of the treatment of epilepsy for the last twenty-five years, in the cases that have occurred under his charge, in which he gives the decided preference to belladonna as a therapeutic agent. He says that, after having tried in vain valerian, orange leaves, white oxide of zinc, the meadow narcissus, the ammoniaco-sulphate of copper, the nitrate of silver, Méglin's pills, the cyanuret of potassium, the croton-tiglium, (not used as a drastic purgative, but as an anti-epileptic,) he was induced to have recourse to belladonna, by the perusal of a case published by Stoll in his *Ratio Medendi*, pars iii. p. 217. Of the other medicines mentioned above, he derived the greatest advantage from the oxide of zinc, the nitrate of silver, and the valerian.

Dr Debreyne has used the belladonna extract in about two hundred cases

of epilepsy during the last twenty-five years, and he says there has been scarcely one in which its use was not attended with advantageous results. Generally speaking, the fits have been diminished in intensity, and have occurred less frequently, or have been altogether suspended for weeks, months, or even years. Cases have occurred where the fits used to come on every month or week, or even several times in the week, but where, under the influence of the belladonna, they have been suspended for six months, and even for one, two, or more years. Some patients have asserted that they had not had a relapse for seven, eight, or nine years. In all cases where the attack comes on with the premonitory aura, Dr Debreyne furnishes his patients with a small bottle of liquid ammonia, to arrest the coming attack. The more frequent the fits are, the more readily is the complaint influenced by the belladonna; but when they occur only once every four, five, or six months, it is much more difficult to modify them—that is, to diminish them in intensity, or to suspend them altogether. In such cases the remedy should be administered some time previous to the presumed epoch of the nearest attack. At the same time it must be observed that belladonna is by no means a specific in epilepsy; in fact, cases would occasionally occur in which the severity of the fit would be for a time much diminished, or the attack altogether suspended, and yet, after the lapse of a certain period, the remedy would become altogether powerless. In such a case no other medicine was found of service. The cases of epilepsy spoken of throughout by Dr Debreyne, are of course cases of the disease, when it occurs independent of lesion of structure; but he adds, that in symptomatic epilepsy, if, after the removal of the cause, the fits should still recur by a sort of habit of the nervous system, the belladonna might be had recourse to, and, should it fail, the quinine alone, or combined with valerian, might be ordered. The mode of administration of the belladonna is as follows:—Four scruples of the watery extract of belladonna are mixed with two of powdered gum arabic, and a sufficient quantity of any inert powder to make 120 pills, one of which is given the first day, two the second, the dose being gradually increased to six in the twenty-four hours, although it may be raised to eight or nine pills taken daily, if disordered vision, or other symptoms of the injurious effects of belladonna, do not show themselves. In that case the dose must be diminished, or omitted altogether for several days. *Ibid.*

Bellows-Sound, a Symptom of Anæmia. By Dr Cowan.

This interesting and important indication of anæmia was at first located in the arteries, and afterwards, by Mr Ward and others, asserted to be in the veins. Like all other controversies, truth probably exists on both sides, and it appears to me certain that both sets of vessels are at times involved. The veins seem first affected, and, as the condition increases, the arteries follow. The superficial and deep sounds can be easily distinguished, and the former arrested by pressure with the stethoscope, which should be applied over the external jugular just above the clavicle, the head inclined to the opposite side, and the observer must sometimes wait and vary his position, and induce some changes in the respiration of the patient, before the sound becomes audible. It is liable to singular variations and alterations in intensity, and is often overlooked during a hasty examination. The venous sounds are louder, more roaring, and continuous than the arterial; as the health improves, the latter ceases, and the former become more intermittent, more feeble, and gradually disappear. The louder and more continuous the sound, the greater the anæmia, and *vice versâ*.

The cause of this singular phenomenon is, no doubt, the diminished volume and modified quality of the blood, involving a want of proportion between it and its containing vessels. Andral's experiments seem to prove

that the principal change consists in the diminished number of the globules, and the relative, if not actual, increase of the serum. The intensity of the sound, he thinks, may be measured by the fall of the globules; it commences when they descend from 127 to 80, and becomes louder from 60 to 40, and is extreme at 27. Below 80 it is constant in the arteries, and sometimes, he says, in the heart, while in rare instances it has existed when the globules were as high as 131 to 137.

It has been supposed that the cervical sounds were produced by pressure with the stethoscope; but it is impossible by such means to excite them in a healthy individual. The bellows-sound, independent of local pressure from tumours or valvular disease, may be regarded as pathognomonic of anæmia, whatever the co-existent state may be. It is a sign of great practical value.—*Lancet* and *Prov. Med. Journal*, July 2, 1842.

SURGERY.

CASES AND COMMUNICATIONS ILLUSTRATIVE OF SUBJECTS IN MILITARY AND NAVAL SURGERY. BY SIR GEORGE BALLINGALL, Surgeon to the Queen, Regius Professor of Military Surgery in the University, and Consulting Surgeon to the Royal Infirmary of Edinburgh.

With reference to wounds of the face, and to the operations which have of late years been successfully performed for the removal of tumours of the upper and under jaw, I have elsewhere observed, *(Outlines of Military Surgery)*, that "the little constitutional disturbance which has often attended these severe and protracted operations, and the rapid and complete closure of the external wound, have surprised me more than most things which I have had occasion to witness in the practice of my profession." This is a remark in which, I think, all those who have seen the numerous operations of this kind which have been performed within the Royal Infirmary of Edinburgh during the last twelve or fifteen years will readily concur; and in farther illustration of the injuries which these parts occasionally sustain from external violence and the lodgment of foreign bodies, I might refer to several cases in the writings of Larrey, Hennen, Dupuytren, and others, as well as to some which have fallen under my own observation. But my more immediate object at present is to place upon record three cases, which, although they have been partially noticed in other publications, are not, in my opinion, so generally known as they ought to be, for the instruction and encouragement of those who may hereafter have occasion to treat such injuries. I am the more desirous of doing this, because I am enabled, through the kindness of my friends, to furnish sketches which will make these cases more readily intelligible than the verbal descriptions already given.[1]

CASE 1. *Extract from Mr Drummond's Letter.*—"This is the head of a well-known character, chief of a considerable tribe to the northward of Sydney, and one of undaunted courage—a great warrior, or, in other words, fond of a *row*. At first sight you will be inclined to imagine, that the various inequalities are in consequence of some specific disease. This, however, is not the case, as the gentleman who gave me the head assured me that he knew almost every occasion on which the various injuries were received. Indeed, you will have no difficulty in crediting this, when I tell you that the natives of New Holland give and take such blows on the head

[1] In the journal from which we quote, Sir George's memoir is illustrated with two plates, each containing several figures.

as to a European would certainly prove fatal, causing to the former only a very temporary degree of concussion. The extensive marks on the head are, perhaps, as much owing to exfoliation, ulceration, or absorption from neglect and filth, (no care being ever taken, or dressing applied in such cases), as from the severity of the blow; and I am the more inclined to be of this opinion, as the internal table does not appear to be injured. Their mode of fighting is with *waddies* or bludgeons of very heavy wood, giving each other alternately smart blows on the head chiefly, from which I have often seen them rendered insensible for some time, but afterwards seemed to feel no further inconvenience, although, on examining the wound, the bone has been found much injured. The same indifference is shown to a fractured extremity, unless it be a lower one, and that of a thigh, consequently no bony union is found to have taken place in such cases; and, indeed, at this period, both their sable majesties of the Sydney blacks are found to have artificial joints of the fore-arm. Have the goodness also to look at the formation of the teeth, which I regret, however, are not complete. You will observe that the crowns of them are flat; and I am induced to believe that this appearance is not accidental, but of original formation, having examined upwards of 200 individuals, and in none of them did I find any resemblance to our *dentes canini* or incisors. I merely mention this rather curious circumstance as deserving of further attention."

Case 2. In the month of December 1827, or January 1828, Lieutenant Fritz, Ceylon Regiment, commanded a detachment of the corps at Fort M'Donald, which is about twenty miles south-east from Kandy. He went out one day with his fowling-piece, and he was found shortly after lying on the ground in a state of insensibility. The fowling-piece had burst, and he had received a wound in the forehead. There being no medical officer at Fort M'Donald, Mr Fritz was conveyed to Badula, which is a distance of about nineteen miles, where he was attended by Assistant Staff-Surgeon Imley. The wound was situated on the brow or forehead, immediately between and a little above the axis of the eyes. It was known that the frontal bone was injured; but my informant is unable to give a specific account of the nature of the injury. Mr Fritz remained at Badula a few weeks, by which time the wound in the forehead had nearly healed, and "the constitutional effects of the injury had completely disappeared." Towards the end of the year 1828, a metallic body protruded through the palate into the mouth, which body has been very gradually but sensibly advancing since that period. He has lost the sense of smelling, and a profuse discharge of puriform matter flows from the nose. In May 1835, the metallic body remained in the roof of the mouth as above described, only it has become a little more loose than formerly. None of the medical people will meddle with it. In the mean time, Jerry Fritz eats and drinks heartily, and does his duty like his neighbours. Mr Fritz never belonged to the Temperance Society, but, owing to the copious discharge from the nose, he claims the privilege of imbibing rather more freely than usual, for the alleged purpose of supporting his constitution. Owing to the offensive atmosphere which surrounds him, he has been relieved from the duty of attending at the mess of the regiment.

Extract from a Letter, dated Colombo, 3d May 1836.—"I mentioned the particulars of Captain Fritz's death in a former letter. I have since seen the iron extracted from the skull, and it is almost beyond credibility, that such a mass should have remained in the head of any man, even for a day, without killing him. I believe there is much doubt as to the effect of removing it, had Captain Fritz permitted Dr Elliot to proceed."

Case 3. Alphonse Louis, aged 22, a soldier in the French artillery, while employed in the trenches at the siege of Antwerp, in December 1832, was struck by a large splinter of a shell, which carried away a portion of the cheek, of the upper lip, the soft palate, and nearly the whole of the

lower jaw, with the soft parts covering it. The tongue was entirely denuded on its lower surface, as far as the base, and, having lost its natural support, hung down to the extent of several inches over the fore part of the larynx, exposing the cavity of the throat. In addition to this, his right fore-arm, which was elevated at the moment, was also struck by the fragment of the shell, and so severely injured as to require amputation below the elbow. The symptoms of reaction which soon took place after these complicated injuries, are stated not to have developed themselves "with a degree of severity proportionate to the extent of the wounds." The patient appears to have been carefully and humanely nursed, his nutriment administered by means of a narrow curved spoon placed on the base of the tongue, and conveying the liquid food into the œsophagus. Appropriate dressings were applied to the wounds; and on the 10th of February, little more than two months after the accident, cicatrization was so far advanced, as to permit an accurate plaster cast to be taken of the face. Subsequent to this, small portions of bone exfoliated, or were removed, from a fragment of the lower jaw which remained at its articulation on the right side, leaving the face greatly mutilated and disfigured. An artificial substitute for the lost part of the face was now constructed of silver, by M. Verschuylen, a skilful artist of Antwerp, from designs given by Dr Forget, who had the treatment of this interesting case. The chief objects of this contrivance were to restore the patient to a sightly appearance, agreeable to others as well as to himself,—to support the pendulous tongue,—to prevent the continued dribbling of the salivary and mucous discharges over the fore part of the neck,—to enable him to speak with facility,—and to be fed with ease. The use of the mask is by no means painful or inconvenient, considering the nature of the wound. It is, above all, of great assistance in arresting in their passage and retaining in the cavity of the artificial chin, the salivary and mucous secretions; it facilitates the action of the tongue; it has restored a face dreadfully mutilated, to a human form; it has singularly softened the rigour of the sufferer's fate, conduced to his comfort, and rendered his existence not only desirable, but comparatively happy. On our last visit to Alphonse Louis, the day previous to his departure for Lille, he appeared in high spirits; he walked about with agility; used the stump of the fore arm with address; took off and readjusted his mask with his left hand; spoke not only intelligibly but easily; he was high-coloured, and fatter, as he stated, than he had ever been prior to his misfortune. He played at cards, and seemed to be as proud of showing the mechanism of his artificial jaw, as he was of the crosses of the Legion of Honour and of Leopold that glittered on his bosom.—*Abridged from Edin. Med. and Surg. Journal*, January 1842.

TRACHEOTOMY PERFORMED SUCCESSFULLY TO REMOVE A FOREIGN BODY FROM THE WINDPIPE. BY M. GUERSENT, JUN.

At the meeting of the Academy of Medicine, on the 5th of April last, M. Guersent, jun. showed a child, four years old, who had swallowed a French bean, and who was admitted into hospital fourteen days after the accident. The symptoms of a foreign body in the air passages, as cough and suffocation, were only occasional. The mucous *râle* was heard in both lungs. As some of his colleagues did not believe in the existence of a foreign body, medical treatment was adopted for three days, but without affording any relief. M.G. then determined to operate, which he accordingly did on the eighteenth day. As soon as the trachea was opened, the bean presented itself at the wound, and was easily removed. The recovery was rapid.—*Gazette Méd. de Paris, 9th* April 1842.

[This case is very interesting, as showing the length of time that a foreign

body may remain in the air passages without producing any serious inflammation, and the late period at which an operation may be successful.]

On Tracheotomy in Croup. By Dr M. Lagemard.

In a paper on this subject, sent to the Academy of Medicine by this gentleman, he mentions that he had performed, on two different occasions, the operation of tracheotomy for croup. In one case it proved successful, in the other it failed. The only thing new in his communication is his objection to the canula. Not being able to procure one in his operations, he kept the wound in the trachea open by means of two bent pins, pushed through the rings of the windpipe, and then tied behind the neck. Instead of the pins, which he was obliged to use for want of any thing better, he is of opinion that two hooks might be constructed, with a sufficient opening to keep the edges of the wound separate, or if they were made without an opening, to tie behind the neck, in the same manner as the canula is fixed. The advantages of this method are, the freer entrance of air into the lungs, the easier expulsion of the false membrane (in his second case an immense piece of false membrane was expelled, which he thinks could not have taken place with such ease if a canula had been used), and in cases where the operation is performed for foreign bodies in the larynx, the greater facility of extracting the foreign body. He recommends the larynx and trachea to be touched with hydrochloric acid diluted in water, and that the patient should never be allowed to lie on his back, but on his side, as in this position the mucus escapes more easily from the trachea.—Abridged from *Gazette Méd. de Paris*, 12th March 1832.

Suffocation from a Foreign Body in the Pharynx. By M. Berard.

At the meeting of the Academy of Medicine, on the 14th of September last, M. Bérard showed a pharynx, still filled with an enormous piece of meat, which had produced instant suffocation. The individual from whom it was taken, was one who had laboured for five years under paralysis, the consequence of effusion of blood on the brain. Deglutition had always been difficult, and the occurrence of a frequent severe cough during his meals showed that the food and drink which he took did not easily find their way into the pharynx. Death had taken place three days before, while eating. From this case, M. Bérard draws the conclusion, that people affected with palsy, ought never to take solid food except when cut into small morsels, and that they ought always to be attentively watched during their repasts.—*Archives Gén. de Méd.*, November 1841.

Cure of Vesico-Vaginal Fistula. By M. Berg of Warsaw.

A woman, 25 years of age, came under the care of M. Berg, in 1807, for vesico-vaginal fistula, about an inch and a-half in extent. Seven years before she had been delivered by the forceps, when rupture of the perineum, as far as the anus, and vesico-vaginal fistula, occurred. From the period of her delivery till the time she became one of M. B.'s patients, she had been operated on three times, once by cauterization with the nitrate of silver, and twice by the methods of Naegele and Lallemand. Upon examination, M. Berg found that the bladder descended between the labia. He returned it and then excised the edges of the fistula, uniting them by six points of suture. This operation failed, and left the patient in a worse condition than before. Not discouraged, he operated a second time, in presence of several medical men.

This time he brought the fistula as far down as he possibly could, then having introduced a plate of horn into the bladder, he excised the whole circumference of the fistula, a line from its edge. He then separated the bladder from the vagina, keeping the wound within his reach, by means of pointed hooks. Ten sutures were found necessary to bring the edges completely in contact. A catheter was introduced, and a cold injection thrown into the bladder and vagina. The former was obliged to be removed, in three days, from the excessive pain it occasioned; it was, however, soon reinserted. On the 7th day, the ligatures were cut away, and on the 8th the vagina was quite dry. On the 10th the catheter was withdrawn. The patient in 1841 was still quite well.

An operation similar to this has often failed in the hands of the most skilful surgeons, and the success which M. Berg obtained is most likely owing to the prolapsus of the bladder, and the great rupture of the perineum, thus enabling him to perform the operation more easily, and to bring the cut surfaces into more immediate contact. This case likewise shows that the diminution of the capacity of the bladder, which must have existed here considering the *duration* of the disease, does not prevent the obliteration of the fistula.—Abridged from *Journ. de Méd. et d'Histoire Naturelle, Gazette Méd. de Paris,* 2d April 1842.

On Excoriation and Fissure of the Nipple. By M. Donne.

The following observations occur in a book which M. Donné has published on the management of young children. He says, that "the excoriations and fissures so frequently seen on the nipples of nurses, are not owing to purely accidental circumstances, unconnected with the secretion and quality of the milk. Besides the pain they occasion the mother and nurse, they are attended by other disadvantages. I am decidedly of opinion, that though external and slight in appearance as they seem, they are almost always owing to an impaired condition of the lacteal secretion; that the infants suffer as much as their mothers, and that under this latter head, they merit the most serious consideration. I have constant opportunities of observing that women affected with them from the commencement of their nursing, have milk more or less poor, of small quantity, issuing slowly from the nipple, and frequently mixed with mucus. Such a coincidence as this would make us suppose that a relation exists between the cause of sore nipples, and the impoverished condition of the milk, and that if they are not depending on a physiological, they certainly are on a mechanical cause, and that they are very often, if not always, the effect of the poor and small quantity of milk which the child gets, whose efforts at suction at last produce ulceration of the nipples. From the imperfect nourishment that the infant must thus obtain, its saliva may become acrid, and thus assist in irritating the skin; so that mothers are frequently as much obliged to give up suckling from the pain that they themselves suffer, as from the increasing weakness and wasting of their child. Sore nipples, then, ought to be a ground for judging unfavourably of a nurse, and in the great majority of cases, sufficient for complete rejection."—*Annales d Obstétrique,* March 1842.

Excision and Cure of Exostosis and Caries of the Tenth and Eleventh Ribs. By M. Jacquet of Braine le Comte.

Pierre Vilain, a labourer, 48 years of age, had, when 13 years old, his 10th and 11th ribs of the right side fractured, from a blow with a pitch-fork. The bones united, but considerable thickening remained over the seat of in-

jury. This increased to the size of a pigeon's egg, and from time to time he suffered from dyspnœa. He continued to labour at his work till 1840, when from the magnitude that the tumour had acquired, viz. that of a fist, and the increasing dyspnœa, he was obliged to apply for relief. The tumour became inflamed, and suppurated, and five fistulas formed. It was then evident that the 10th and 11th ribs were much hypertrophied, and in a state of caries. His health began to suffer. M. Jacquet was then consulted. Having ascertained that the lungs were healthy, and considering that the constitution was only suffering from the local affection, he determined to remove the diseased portion of the rib, which he accordingly did on the 7th of April 1840. The bones were exposed, and divided by means of the cutting pliers. The pleura was opened, but no untoward result followed, and in two months the cure was completed, and the patient in good health. In reading this paper before the Society of Natural and Medical Sciences of Brussels, M. Jacquet presented for the inspection of the members, both his patient, and the pieces of bone which he had removed. The editor of *L'Examinateur Médicale* says, that the operation of excision of the ribs is one which has hardly been performed for the last thirty years; that it was introduced into practice by Richeand, and that only few cases of it have been recorded; (one was published in *L'Examinateur Méd.*, t. i. p. 122.) that he had seen the subject of this case some weeks after, and that the wound was still fistulous.—*Ann. de la Soc. Dis. Sc. Nat. et Méd. de Bruxelles*, 1841. Abridged from *L'Examinateur Méd.*, 24th April 1842.

Ligature of the Subclavian and Arteria Innominata Arteries for wound in the Arm-Pit. By M. Hutin, Chief Army Surgeon at Oran.

The wound was the effect of a duel, and was occasioned by the blade of a large pair of scissors, which the combatants had separated, and fixed to handles of wood. On removing the dressing, twelve days after the infliction of the wound, arterial blood, in a stream about the thickness of a pen, spirted from the cavity. As none of the applications had recourse to, arrested the hemorrhage, M. Hutin proceeded to tie the subclavian, which he did external to the scaleni muscles. The bleeding immediately ceased, and the pulse could not be felt at the wrist. Six days after the ligature of the artery, the hemorrhage recurred, but to a small extent. On the day following, there was also a little. On the ninth day, the ligature came away, and in the evening, after a fit of coughing, there was a jet of arterial blood from the subclavian. It was then considered necessary to tie the innominata, which was done at midnight. The operation, which is said to have been well performed, was long and painful. The patient, however, sank in twelve hours after. At the post-mortem examination, the ligature was found to have been placed round the innominata, about a centimetre at most from its bifurcation, and none of the important parts in the neighbourhood were injured. The subclavian was divided about thirty millimetres from the nearest branch; its extremities were closed by a clot more than a centimetre in length. The blood had escaped from the upper end of the artery, or that extremity next the heart. The axillary artery was entire, but the inferior thoracic was completely divided about a centimetre from its origin. Nothing, not even congestion, was found in the lungs or brain.—*L'Examinateur Méd.*, 22d May 1842. Taken from *Ann. de Chirurg. Française.*

Case of Varicose Tumour in the Groin, simulating a Crural Hernia. By Dr Castella.

Nicolas Pillouin, 54 years of age, was seized on the 17th February 1841,

with violent colic, tenesmus, and obstinate constipation. For a considerable time previously, he had suffered from diarrhœa, with pain and straining when at stool, but to this he had paid no great attention, as it always yielded to the remedies which he took. When Dr Castella saw him, his face was flushed, and he had general febrile excitement; his abdomen was painful on pressure, more especially near the pubes, where a kind of round tumour was felt. The patient, however, said that he passed his urine easily. Twenty-four leeches to the anus, and warm cataplasmata were applied to the abdomen; emollient enemata were ordered to be administered. On the 18th he was not improved. Dr C. examined the inguinal regions, and found no tumour. He was bled, and was to take a tepid bath morning and evening, with half an ounce of castor oil and two grains of calomel every alternate two hours. Upon introducing a catheter, the bladder was found empty. There had been no stool. He got gradually worse. The abdomen became more distended, and vomiting supervened. He was again bled, and castor oil with calomel and opium were continued, along with tobacco injections, and the introduction of a tube into the rectum, which, however, could not penetrate further than three inches. Dr Castella was of opinion, that the patient was labouring under schirrus of the rectum, or invagination of the ileum. As every remedy tried had failed, as a last resource the operation of making an artificial anus in the groin, as recommended by Callisen, and performed by Amussat in Paris in 1809, was proposed to the patient; but neither he nor his friends would allow it to be done. He gradually became weaker, and sank on the 25th. At the post-mortem examination, twenty-four hours after death, Dr Castella, to his great horror, observed in the left groin, below the ligament of Fallopius, and exactly in the situation of a crural hernia, a tumour about two inches in length, of a pyriform shape, and larger inferiorly than superiorly. The skin was of a brownish colour, and raised about an inch above the level of the integuments. He immediately concluded, from the symptoms that had existed, that it was femoral hernia, and which, notwithstanding his examination, and the questions he had asked the patient, he had failed to discover. Dr C. began to perform the operation on the dead, as he would have done on the living body. After having divided the skin, the tumour was exposed; it was smooth, of a brownish colour, and pyriform shape; and as it stretched under the crural arch, it formed an elongated pedicle. Still believing that it was a hernia, he divided what he supposed to be the hernial sac, when to his surprise nothing but dark blood in a semi-coagulated state flowed out. On examining the tumour, it was found to be a varix of the crural vein, which latter was obliterated under Poupart's ligament, by a thick clot; the internal membrane was thickened, and of a deep red; other varicose tumours were found on the inner side of the thigh and leg. On opening the abdomen, the intestines, and more particularly the large, were much distended with gas; they were inflamed, and adhering to each other by recent effusion of lymph. The rectum, about three inches from the anus, and to about two inches in extent, was completely obstructed by a scirrhous ulcerated mass, of an inch in thickness, and having its internal surface of a black colour. The inflammation which caused death was evidently produced by this disease. The shape of the tumour, which was pyriform and pediculated, its colour and fluctuation, with the other varices found in the course of the crural vein, should have distinguished it from a femoral hernia, which again is globular, hard, and more intimately connected to the crural arch. A similar case is mentioned by Petit, in the second volume of his surgical works, to which he was called, to determine whether a tumour in the groin was a hernia or a varix. As there were no symptoms of strangulation, he had less difficulty in deciding it to be a varix.—Abridged from *Gazette Méd. de Paris*, 12th March 1842.

Perforation of the Sternum and of the Aorta, by a Blow with a Knife. By Dr Casper.

Dr Casper has been unable to find in authors any case of perforation of the sternum by a cutting instrument. The one which he has published in the Wochenschrift fur die Gesammte Heilkunde, was that of an unfortunate woman who was stabbed in the breast with a common table-knife by her husband in a fit of anger. Death was instantaneous. On dissection no blood was found effused externally, and there were no sagillations under the skin; the wound had the appearance of one made on a dead body. On opening the chest, blood was found in the mediastinum; both the sternum and aorta were perforated.

Besides the rarity of this case, it appears interesting in a medico-legal point of view, as showing the difficulty of distinguishing between wounds made before and after death.—*Gazette Méd. de Paris, 9th April* 1842.

Amputation at the Hip Joint. By M. Sedillot.

At the meeting of the Academy of Sciences in Paris on the 28th December last, M. Larrey, conjointly with M. Double, read a report on a memoir by M. Sédillot on this subject. The chief object of the memoir is to draw attention to a case in which M. Sédillot performed this operation with success; the case being remarkable, inasmuch as it is the first instance in which this operation has succeeded in Paris. M. Larrey stated that in M. Sédillot's opinion, this operation should never be performed as a primary operation,—that it should always be postponed till the primary inflammatory accidents had subsided, and suppuration was established. In support of this opinion M. Sédillot appeals to the dangers which must result from throwing back a large quantity of blood on the principal viscera suddenly, and without the constitution being antecedently prepared therefor by being gradually debilitated. These dangers M. Larrey considered as exaggerated, and at all events they could be obviated by venesection, or by cupping over the epigastrium. M. Sédillot is also apprehensive of the nervous shock that would result from amputation immediately after the injury; but this, no doubt greater after traumatic than spontaneous lesions, is of but temporary duration. M. Sédillot also fears that spasm will follow the division of the great nervous trunks, but no argument can be thence deduced against primary amputation, as these nerves must be divided in either case, and the effects must be the same. The thigh then may be disarticulated both immediately after injuries, and in chronic diseases, and if the operation succeeds better in the latter class of cases, the reason is, that such cases are less serious in their nature. In every case, M. Larrey considers that the chances of success will be increased by previously tying the crural artery in the fold of the groin. He considers, that the results of his own practice demonstrate the utility of this precaution. —*Dublin Medical Press*, Jan. 19, 1842.

Case in which an Abscess behind the Œsophagus was mistaken for Œdema of the Glottis. By Dr Ballot, Physician to the Hospital at Gien.

The following interesting case we copy from the *Dublin Medical Press*. The patient was a man forty years of age, of intemperate habits, and much exposed by his employment to all changes in the weather. He had suffered for some days from sore throat, when, on 27th September 1837, he applied at the hospital. At that time the pharynx was slightly red and dry, but not perceptibly swollen. Deglutition was difficult, and the patient was un-

able to speak aloud. He complained of pain in the pharynx, and of a sensation as of some foreign body there, impeding deglutition and respiration. The finger introduced deep into the pharynx distinguished a tense and elastic swelling, on a level with the upper part of the larynx, apparently continuous with the glottis, and perceptibly diminishing its aperture. The patient was bled to 18 oz. by weight, and was put on a strictly antiphlogistic plan of treatment. On the following day, venesection was repeated to the same amount, thirty leeches were applied to the throat, and a blister was put on the back of the neck. These measures were not followed by any amendment, paroxysms of threatening suffocation occurred, but deglutition was not observed to be more difficult on the 29th than it had been on the patient's admission into the hospital. The patient continued to be treated very actively until the 8th of October, when laryngotomy was performed, in order to relieve him from the suffocation with which he appeared to be threatened every moment. The opening in the larynx did not produce any marked improvement, but the patient breathed freely after the introduction of a canula into the trachea. During the night, however, the tube became displaced, and in the morning the man became asphyxiated. On examining the body after death, it was found that no tumefaction of the glottis existed, but that its orifice was almost completely closed by a fluctuating swelling of the size of a hazel nut, which projected over its upper part. It extended downwards below the cricoid cartilage, and pressed the cavity of the larynx considerably. It was formed by the collection of healthy pus, which was in contact with the anterior wall of the vertebral column and the posterior surface of the œsophagus, and extended along the sides of the larynx, in such a manner, that on the left side, it was not more than a quarter of an inch from the upper angle of the incision made between the thyroid and cricoid cartilages. These circumstances explain the prominence felt by the finger passed into the pharynx, as also the reasons why respiration was so much impeded, and why the canula introduced into the opening had such a constant tendency to become displaced. They further suggest, that in any similar case tracheotomy should be preferred to laryngotomy.—*Arch. Générales de Méd.*, Oct. 1841; and *Brit. and For. Med. Review.*

Treatment of Ascites by Injections of a Solution of Nitrate of Silver. By M. Daniel.

M. Daniel communicated the following case, on the 11th of last December, to the Academy of Medicine. In 1836 he tapped a female who had laboured under dropsy during four years. After the operation the actual cautery was applied to several parts of the abdomen; the fluid again accumulated, and paracentesis was again performed, after which second operation M. Daniel injected into the peritoneum a solution of nitrate of silver, and a cure resulted. (General expressions of surprise and disapprobation.)

M. Villermé expressed his astonishment at such treatment having been hazarded. He should regard a patient subjected to such an operation as almost inevitably sacrificed.—*Dublin Med. Press*, 12th Jan. 1842; and *Gazette Méd. de Paris.*

On the Treatment of Gonorrhœal Ophthalmia. By M. Ricord.

After having mentioned the inutility of the modes of treatment had recourse to in this disease, M. Ricord says, that whether we consider the inflammation to depend on direct contagion, or on metastasis, it is necessary, even before it has become at all severe, or has given pathognomonic proofs of its nature, to treat it in the most active manner, and that the best application, besides a strict antiphlogistic regimen, is the nitrate of silver. The

way in which he recommends it to be applied, is in the solid form. It may, however, also be used in solution, in the proportion of two grammes of the caustic, to eight grammes of distilled water, or thirty grains to the two drachms. After the first application, if there is no diminution of the swelling or pain, and if the secretion is not less, and has not changed its appearance and consistence, and become thinner, reddish, and bloody, the caustic should be applied again, and within from four to six hours. As long as the whitish pellicle, (which is nothing but a slight slough,) is found on the eyelids, it is not necessary to reapply the salt; but if the pellicle be found wanting in some parts, and the inflammation appear to be progressing, the diseased parts must be retouched with the nitrate of silver. Instead of dropping oil into the eye, as is generally recommended, M. Ricord uses an injection of water, so that all the excess of the caustic is washed away. When chemosis exists, whether in an œdematous or phlegmonous form, and does not yielding to the cauterization, the chemosed membrane should be removed by the scissors; but those parts of it which are to be left, should be first touched with the caustic, as it is difficult to apply it conveniently and properly when the eye is bathed in blood. Blisters should never be had recourse to, until the violence of the disease is subdued. If they are applied during the acute stage, they are more likely to do harm than good. By following this method, combined with antiphlogistics and purgatives, belladonna ointment to the eyelids, and lotions to the eye, M. Ricord has only lost within the last ten years, one eye, and that one was affected with phlegmonous inflammation.—Abridged from *L'Examinateur Méd.*, May 22, 1842; taken from *Bulletin de Thérapeutique*, January and February.

Polypus removed from the Uterus before it had escaped into the Vagina. By M. Andrieux de Brioude.

A woman, 26 years of age, was seized in May 1840 with hemorrhagia, which, besides the catamenia, recurred from time to time. In January 1842, she was admitted for the second time into an hospital. She was then much debilitated from the loss of blood. On examination by the speculum, the womb was found to be twice its natural size; the neck was somewhat effaced, and lying on the rectum. When a probe was introduced into the uterus, it came in contact with a hard resisting body, which it was impossible to move either to the one side or to the other. This was thought to be a polypus. As the hemorrhage still continued, and it was likely that the patient would soon sink if nothing was done to check it, M. Andrieux determined to attempt the removal of the tumour, as the only chance that the woman had of being saved, even although almost all surgeons are against an operation for removal of a polypus before it has escaped from the uterus into the vagina. As large a sized speculum as possible was introduced into the vagina, and the os uteri divided by a long and strong pair of scissors, first to the right, and then to the left side. An injection of cold water being thrown up, the polypus was distinctly seen, and grasped by a double hook. It could not, however, be brought down into the vagina. As its attachment appeared to be smallest towards the anterior part of the womb, curved scissors were passed up, and its connection to the uterus separated. It was about the size of a nut with its husk. The patient lost little blood, and hardly complained of pain. In April her embonpoint was fast returning, and her catamenia had appeared.—Abridged from *Annales d'Obstétrique*, April 1842.

Reunion of Two Fingers, each in two pieces, and entirely separated from the hand. By M. Della Fanteria.

A young girl, from 14 to 15 years of age, was engaged in household work with another person, when by mistake of the latter, she had two of her fingers cut off below the first phalanx. M. Della Fanteria, sent for shortly afterwards, found the pieces in bran, in which the girl had her hand at the time of the accident, and to his great surprise, he discovered that each of the pieces of finger was in two portions. Having determined to try reunion, he joined them by suture and a bandage. In some days adhesion was found to have taken place, and at present the girl has the complete use of her fingers. Arterial action is perfect.—*Gazette Médicale*, 5th March 1842.

[In a note, the editor of the *Gazette Médicale*, after remarking that even the most unprejudiced men are slow to believe in an extraordinary case of this kind, unless attested by authentic witnesses, and observations likely to prove the possibility of such a circumstance, goes on to mention similar cases which had occurred to Messrs Morley and Bean. He states also, that in 1837 M. Velpeau replaced with success the fleshy part of the fore-finger, an hour and a half after it had been removed. Many cases are on record of the reunion of completely separated portions of a finger. One is published in the Monthly Journal, (April 1841, p. 257,) by Mr Graham.]

Ununited Fracture of the Humerus Cured by the insertion of a Seton at two different periods. By MM. Mawroury and Thore.

A young woman, 22 years of age, in November 1840, fell a height of three metres, upon her left elbow, and met with a compound fracture of the humerus at the middle. The arm was not properly put up until the following day, when she entered the hospital. Splints and a roller were applied, which were removed daily in order to dress the wound, so that considerable motion of the fractured extremities took place. As there was no appearance of union at the end of 30 days, the starch bandage was employed, but in such a manner as to leave the wound exposed. Having derived no benefit from this treatment in 4½ months, and as she was suffering great pain, and believed at the time that her case was incurable, she left the hospital, but returned in six weeks to the Hôtel Dieu. She then came under the care of M. Roux. She was still in good health, the wound in the arm discharged freely, but she felt great pain. Upon examining the arm, M. Roux discovered a fragment of bone lying between the fractured extremities. This he removed, and at the same time passed a seton between the broken surfaces; it was kept inserted for eight days. The arm was then kept immoveable by the starch bandage for four months, but at the end of this period it was still quite flexible. She then left the hospital for a month. When she returned, she was under the care of M. Maisonneuve, who at that time was taking charge of M. Roux's patients. M. M. passed another seton considerably thicker than the first one, and allowed it to remain for 15 days. General tumefaction of the arm followed, and pus flowed from the wound, both of which soon subsided after the removal of the cord. In two months there was hardly any mobility, and at the end of three, the patient experienced the sensation as if the arm was firm. When she left the hospital six weeks after, she was still unable to lift the arm; but upon being visited in three weeks, a solid osseous deposit round the fracture was felt, there was also great stiffness of the elbow and wrist joints.—Abridged from *Gazette Méd. de Paris*, 25th June 1842.

[This case is interesting from false joints not being very common occurrences in fractures of the humerus. In this instance it may be accounted for; —1st, from its being a severe compound comminuted fracture: 2nd, From the bone not being kept immoveable at first, but subjected to considerable motion from the splints and roller being removed daily to dress the wound, whereas this might have been accomplished, and the bones kept firm, by using either the starch bandage as was afterwards done, or the many-tailed roller: and, 3d, From the splinter of the bone not having been removed at a much earlier period of the case. It shows also that a second seton may be had recourse to with some prospect of success, even after a previous attempt by this treatment has proved unsuccessful.]

MIDWIFERY.

On Placental Presentation. By Charles Clay, M.D., Lecturer on Medical Jurisprudence, Manchester.

Dr Robert Lee, in his Clinical Reports of Midwifery, published in *The Lancet* of the 4th June 1842, gives the result of treatment in twenty-three cases of uterine hemorrhage arising from placental presentations, of which ten proved fatal, a mortality which I consider serious, and demanding inquiry. In my own practice, in forty-two cases, there were only six fatal, and of these, two were phthisical, and the remaining four had been sinking from hemorrhage before my arrival. I agree with Dr R. Lee, as well as all the best writers on midwifery during the last century, that in hemorrhage from placental presentation, artificial delivery must be resorted to, but do not think that this step should be taken *at once in all cases*, when such a state of matters has been ascertained. Where the *os uteri* is dilatable, there can be but one opinion, that delivery should be attempted without loss of time; but where there is a decidedly thick, rigid, and unyielding *os uteri*, the propriety of this practice is questionable. I have scarcely ever witnessed a case of hemorrhage from placental presentation, with a thick, unyielding, rigid os uteri, at the full period of gestation; such a state being, with very rare exceptions, peculiar to premature uterine efforts. I therefore believe that the best practice is to bring the case as near the full period of gestation as possible, when, from the uterine orifice being more dilatable, a fatal result is less probable. How is the uterine action to be allayed? I have not the least hesitation in stating, that when such comes on prematurely, a powerful opiate will not only arrest the uterine efforts, but, as a natural result, the hemorrhage will in most cases immediately cease. I have had many cases where this occurred in the seventh and eighth month, which in consequence of the opiate treatment went on to the full period.

Interference by turning in premature cases, can only be justified in extreme cases, as after a long continued hemorrhage, great prostration of strength, and the patient's sinking; in any other circumstances it is an injurious practice. Eighty minims of the tincture, or from a half grain to two grains of the crude opium, is the least quantity likely to be effective, and, if necessary, this dose is to be repeated. The following is an analysis of the seven cases published in *The Lancet* of June 4th, by Dr Lee:—

Case 1.	Premature.	Rigid os uteri.	Fatal.
— 2.	Ditto.	Ditto.	Ditto.
— 3.	Ditto.	Ditto.	Recovered.
— 4.	Ditto.	Little dilatable.	Ditto.
— 5.	Not stated.	Rigid.	Ditto.
— 6.	Ditto.	Dilatable.	Ditto.
— 7.	Premature.	Very rigid.	Fatal.

The above table is evidently favourable to my view, and I only wish that I had the particulars of all the twenty-three cases before me. The late Mr K. Wood of Manchester, a very able and well-known obstetric practitioner and lecturer on midwifery, always recommended, where a possibility existed, "*that every means should be adopted to bring such cases as near the full period of utero-gestation as possible,*" an opinion which I have invariably acted upon for twenty years with no small advantage. I always prefer the solid opium, (in pill simple), that is, uncombined with any other substance: it is less likely to produce sickness and vomiting, which a large dose of the tincture very often does. The narcotic effect of *good* solid opium is far more certain. In such cases I never neglect to apply a bandage of considerable breadth over the uterine region. Stimulants and heated liquids of every kind must be carefully avoided. Abridged from *Medical Times*, June 25, 1842.

ABSENCE OF PAINS IN PARTURITION. By FREDERICK CRIPPS, Liverpool.

At 11 P.M., Mrs C., living at 4, Tempest Hey, went to bed, and soon fell asleep. She was awakened by "a gush of water," unattended with pain, by which, it being her first pregnancy, she was a little alarmed, and sent for me. On examination, I found the presentation natural, the membranes ruptured, and the os uteri dilated to the size of a shilling, but no indication of uterine action. I accordingly left her, requesting the nurse to send as soon as any "pains" should come on. Between three and four on the following morning, happening to be sent for to see a person in the neighbourhood, I called, and found that she had slept soundly during my absence, but was occasionally disturbed by cramps in her legs, but still no pain whatever in either her back or abdomen. I now to my surprise found *the dilatation almost complete*, the finger receiving a sensation of continuous propulsion, without paroxysm or interruption. This singular feature in the case induced me to retain my hand *in situ;* which I continued to do until the child (a full grown living boy) was born, which occurred in little less than half an hour. Ten minutes previous to this, she said that she felt "as if something were pressing down, and thought she wanted to go to the night chair." This sensation, with the exception of the before-mentioned cramps in her legs, was the only approach to pain or inconvenience which she experienced from first to last: indeed, during the whole period of labour, if in this case the term be not a misnomer, she was asleep. About five minutes after the birth of the child, the placenta was expelled without the slightest effort. Abridged from *Lancet*, June 11, 1842.]

[In our July Number, p. 610, will be found a case by Mr Thomas Lewis of Liverpool, "in which pregnancy was unattended with the usual signs, and in which parturition occurred without labour pains." The following paper by Mr Clay, as it contains some remarks on the case of Mr Lewis, and some other important remarks upon unconscious parturition, is subjoined. Mr Linnecar's case in our report of the Medical Society of London we also refer to. The subject is important both in the study of midwifery, and forensic medicine.]

PREVALENCE OF ALMOST UNCONSCIOUS PARTURITION IN MANUFACTURING DISTRICTS; WITH REMARKS ON UNCONSCIOUS CONCEPTION AND PARTURITION. By CHARLES CLAY, M.D., Manchester.

I have very frequently had occasion to observe, in a long practice amidst a factory-working population, the great facility with which many females get through their labours in some cases; this is to such an extent, and accom-

panied with so little emotion or apparent suffering on the part of the patient, as to border on unconsciousness, at least extreme apathy to the circumstances connected with and surrounding them at the time. Even in first cases I have seen a sort of hardy, if not heroic, determination (or rather, I might say, dogged stupidity,) not to move a limb, or express the slightest feeling of pain during labour.

The cases most remarkable for this are those who have had perhaps three or four children previously, and are of a pale, exsanguineous complexion, of a lax, muscular fibre, and rather above than below the average stature; the too common features of factory employment. Under such circumstances I have seen cases where it was next to impossible to say if the patient was labouring under the effects of uterine pains and contraction, had it not been for the pressure of the uterine mass against the finger during an examination. I attribute this peculiarity, in a great measure, to the debilitating nature of their employment, prematurely maturing the system, and by the high temperature of the mills, some of which run up from 85° to 90° Fahrenheit, producing a continuous and too copious perspiration, creating that system of muscular laxity which accounts for the great facility of many of their labours; to which may be added, the early time of life many of them become mothers (having had three instances of their being mothers at fifteen years of age,) and the children (at birth) being somewhat less than the average weight and size.

Still, with all these debilitating facilities, I have never as yet witnessed a case of one of sound mind, and under the average circumstances of bodily health, that could be said to be unconscious of delivery. That some will from known, others from causes unknown, doggedness, or spirit of bravado, attempt to conceal the common feelings observed on such occasions, I allow; and that they frequently carry this to an almost incredible extent: still I maintain, with most medico-legal writers, that we have yet to see unconcious delivery proved, as well as that of unconscious conception, excepting in both cases under the influence of narcotics, idiotcy, or coma from disease. And that unconscious conception and delivery are incompatible with a sound state of mind and healthy condition of body, I am led to make these remarks in consequence of a communication in *The Lancet* of November 27, 1841, page 294.

The following circumstances are stated, unfortunately too briefly for a case which the relater observes to be one of the utmost importance in a medico-legal point of view. The case is as follows, copied from *The Lancet*, communicated by T. E. Rawson, Esq., of Leicestershire:—"I was sent for to attend a young married woman in her first confinement. The message was sent after the waters had been unexpectedly discharged. I had to ride a distance of three miles, but found she had had no pains, *and she assured me the discharge of waters was not attended with any uneasiness, not even sufficient to have awaked her had she been asleep at the time.* On examination, I found the os uteri dilated, and the head presenting. The child was *slowly* and unintermittingly but *forcibly* expelled. She betrayed no symptoms of uneasiness whatever, and *though I watched her countenance* she did not exhibit the least consciousness of the child's expulsion, but expressed *her surprise on seeing it.* The child was strong and lively, and with the mother did well. The mother was about twenty-two years of age, *short, plethoric,* and healthy. She was strictly respectable, and had been married full ten months; indeed she could have no motive whatever for disguising her feelings.

"I conceive the above case is interesting in a medico-legal point of view. Dr Montgomery doubts the possibility of such an occurrence 'excepting under peculiar circumstances, *certainly not in a first delivery.*' In Beck's Jurisprudence it is said 'that the possibility of a woman being delivered without being conscious of it is disbelieved, *excepting some extraordinary*

and striking cause intervene.' But if such a circumstance *can happen* with a *first child*, it must have its full weight in cases of infanticide. I am, Sir, &c. &c."

I think on perusal of the foregoing case it must be evident to every one who has had *any* opportunities of judging, that there are points at variance with what is found in general practice. *It was a first labour.* The waters had been discharged for some time, as a messenger had to be sent three miles, and Mr Rawson had to ride three miles before he saw the patient. "*She said* she had had no pains," and *she assured* him the discharge of waters was not attended with any uneasiness, *not even sufficient* to have awaked her, if she had happened to be asleep at the time." The very term *not even sufficient* was an acknowledgment of some pain having been felt.

As to the fact of pains subsiding after discharge of the waters, it is a circumstance too common to dwell upon. I have known them to subside for hours, particularly where the membranes have given way prematurely, as they often do, by a little extra exertion, turning suddenly in bed, &c. But to proceed to the progress of the case. "The os uteri was fully dilated, head presenting: the child was *slowly* and unintermittingly but *forcibly* expelled." I cannot reconcile this statement; the acknowledgment of a *forcible* expulsion, accompanied with *slow progress*, is contrary to the idea of unconsciousness. That the patient betrayed no symptoms of uneasiness I can well conceive, from what I have said in the early part of these observations; but from the position in which females are usually placed on such occasions, I am at a loss to know how her attendant watched the countenance so closely. That circumstance alone convinces me she was more an adept in dogged determination than an example of unconsciousness. Her surprise at seeing the child might not only arise from the same motive, but also nurses are often given to magnify the sufferings of such times, and she might feel surprised at having so little, comparatively speaking. Independent of its being a *first labour*, there are other points of consideration equally knotty; she was *short in stature, plethoric*, generally the very reverse to easy labour, and said to be *healthy*, consequently no laxity of muscular fibre. As proofs of this, *the length of time elapsed between the discharge of the waters and delivery*, which could not be much short of two hours, if a messenger had to go three miles, though the attendant rode on horseback, even supposing he was ready mounted on the arrival of the message, *the acknowledged slow advancement of the head, and the forcible pressure, &c. &c.*

That she might have no reason for concealing her feelings, being *respectable* and *married*, does not in the least answer for her capricious wish to disguise her suffering. I have seen too much of the sex under such circumstances to take all for granted that is related. I cannot imagine this case is either so remarkable or important, in a medical or legal point of view, as the narrator supposes; certainly the writers on jurisprudence are in no fear of having their opinions called in question by this case, it being, in fact, nothing more than a very easy labour, with a determination to cover her real feelings, and perhaps without any motive except that of a mere whim. That she was conscious of pain, the expression of *not even sufficient*, with the fact of its being a *first labour*, of a short, plethoric, healthy woman, where the waters had been long discharged, and the child born *slowly* but *forcibly*, will fully prove.

As to easy parturition, I may illustrate from my own practice many instances; two or three I will briefly recite. One person whom I had attended in twelve labours, and *omitting the first*, she had not as much pain in the whole of the remaining eleven as is usually felt in half-a-dozen average labour pains. A second, who had given birth to fourteen children, of which I attended her five of the last, *almost but not quite destitute of pain;* she often told me she never had but two good pains in her life, and those were during her first labour. Without giving credit to the full amount *of her statement*,

I can safely aver, she scarcely ever had an average pain in the whole of the labours in which I attended her. And a third case I may add, of one whom I attended in nine successive births, that never experienced a pain till the very moment the waters were discharged, and those of a very slight character. After the waters came away she generally (after resting about half-an-hour,) had one slight pain, which completed the birth of the child; and, with one exception, the placenta with it.

Male, in his *Epitome*, states, "Women have frequently brought forth on the night chair, not aware of their situation; these instances, however, are rare in first pregnancies." This is not unconsciousness, but merely mistaking the bearing down of a child for a fæcal motion.

The case of a wife of a bombardier, related by Darwell, in *Beck's Jurisprudence*, delivered in the act of striding out of bed, without previous warning, does not prove but that a pain was present, though it might be slight. Another case related by Dunlop, of a woman denying the circumstance after the child's head was born, until the child began to cry, does not prove but that she was perfectly conscious, *but denied the cause of pain.* A circumstance in every way similar to this occurred to a medical friend of mine some time ago.

The question of unconscious conception has been equally debated with unconscious delivery, and has been admitted possible under the influence of narcotics, idiotcy, coma, &c.; and so far it may be admitted as possible in delivery. The Countess de Saint Geran, under the influence of powerful narcotics, was delivered of a child, which was removed from her for motives of interest.

In 1835 I was called to attend the wife of a miner, in labour of her sixth child. When I arrived the pains occurred at too long intervals, and the os uteri was too little dilated for any interference: I advised her to take a little tea, and I would call again shortly, warning her against taking anything stronger (knowing the irregular habits of the person). On my second visit (in less than an hour from the first) I was met by the husband, in a state of great alarm, his wife being taken on a sudden very ill; he thought she was dying. On going into the room a curious scene presented itself: the woman lay flat on her back, in a state of insensibility, no rousing her; and although uterine action was going on, there was nothing like convulsions. On examination the head was just emerging, and immediately after the child was born, the placenta extracted, and the patient lifted from a wet to a dry part of the bed; all of which she was perfectly unconscious of, and remained so for six hours. Whilst attending to the delivery I observed sundry mysterious looks between the two women attending, and I insisted on knowing what had transpired in my absence, when they acknowledged having fetched a pint of gin for the patient, but at the time little thinking but that each would get a share; but on the patient getting hold of the vessel she drank the whole pint. I feared the consequences of this rash step, but strange to say, she recovered without a bad symptom.

Here was a case of most decided unconsciousness, arising from stupefaction, caused by the liquor taken; had it not been for that, no such a state of unconsciousness would have existed.

It is almost needless to enlarge on this subject, further than to state, *unconscious delivery and conception are both perfectly incompatible with a sound state of mind and healthy condition of the body*, and any arguments to the contrary appear to be ill-founded, and calculated to do injury where it is intended good should be done. My remarks would have ended here but for another case that has just been published in *The Lancet* of this month (May 21), which, if possible, calls more imperatively for observation than the one preceding. It was communicated to the Medico-Chirurgical Society, by Dr C. J. B. Williams, from Mr Lewis, of Liverpool. Whilst reading it I fancied the time of a society of such high standing might have been much better

employed. The case was of a lady, aged 31, with an enlarged abdomen, of six or seven months' standing, *but who stubbornly maintained she was not pregnant; even examination per vaginam, though conclusive to the attendant, failed to convince her;* and yet the *ipse dixit* of this lady is taken to upset the matured opinions of lego-medical writers, after long inquiry and laborious investigation, supported by innumerable facts. The absurdities of this case will appear in the further relation of it.

Mr Lewis was sent for, the child was born before his arrival (*his own personal observation, therefore, was wanting.*) The funis was ruptured near the umbilicus, *which, wonderful to relate, did not bleed.* Now, reader, listen: "*At one o'clock in the morning she awoke with, she says, griping pains in the belly; these continued till six, when she got out of bed for ease.* (Mark, five hours' pain.) *She walked into an adjoining room, when, on bending herself, the waters broke, and the child was expelled,*" *&c.* And yet this case is regarded as parturition without labour pains, merely *because the lady* (who denied her pregnancy even after examination per vaginam, told, beyond doubt, her state), *said positively* she had had no pains *in the loins,* or bearing-down previously. Why, the veriest tyro in midwifery knows that hundreds of cases are stated to occur without pains in the loins or thighs. Any old woman can relate how many of her acquaintance have had what they vulgarly term *belly-labour;* and how often do cases occur where such pains distress the patient for hours, without much progress being made. But this all-important case is stated to establish certain positions: "First, That pregnancy may occur, and nearly reach its termination, without many of its ordinary signs." It would be difficult to say how long this fact has been known, but I should say at least centuries. "Second, That the uterus may contract without the consciousness of the mother." I am at a loss to conceive on what grounds the above case establishes this position, *when she awoke with griping pains at one in the morning, which continued till six, when she was delivered.* "Third, That the funis may be lacerated, and bleed little or none." Dr Merriman very tritely remarked, "there was nothing wonderful in the case." What would have become of the lower order of animal creation had it not been for the well-known fact, that a lacerated funis (like all lacerated organic structures) bleeds very little; even limbs of adults have been torn off without loss of blood, (at least to a very trifling extent.) How the various medico-legal advocates must have trembled at the establishment of these new propositions, calling on them to renounce their former tenets, drawn from thousands of cases, after deep and laborious investigation; and this by the exposition of one case, remarkable, wonderful, and extraordinary, which almost every one that has practised at all must have seen. Such cases are ill calculated to advance the science of medicine, or unravel the knotty points of medical jurisprudence.

Before I conclude, I would add a few words on the question of unconscious conception. I am well aware Capuron does, *and he is almost the only one* that maintains the *possibility* of such an occurrence, and that Dr Gooch produced a case which he supposed supported that opinion; but the world (at least the medical world) must be better satisfied than with the result of a single case, which, to say the least, carries with it no very convincing proofs. It is to be regretted when such cases are advanced. Dr A. T. Thomson has justly observed, we must not be misled by them, and the profession cannot be too cautious in giving evidence on such questions. As to unconscious delivery, the same gentleman observes, "*There can be but one reply to this question, in reference to women who are sane, but it is possible that such a circumstance may occur in insanity;*" to which he might have added, narcotic influence, coma from fever, and stupefaction from spirituous liquors.

I may add, in reference to the case of Mr Lewis, that uterine contractions admit of great variety, and are probably governed by the position of the child in utero, which will, by its position alone, so alter the external form

of the gravid uterus, as to produce differences of pressure on the abdominal and pelvic viscera, causing a different feature in the pains accompanying parturition. Hence we have sometimes the pain commencing in the loins, running round the abdomen, and terminating down the thighs; or commencing in the abdomen, thence to the loins and thighs; or they may occupy the loins and not the abdomen; and lastly, the abdomen, and not the loins.—*Lancet*, June 18, 1842.

MATERIA MEDICA AND CHEMISTRY.

On Mattico as a Styptic. By Wm. Munro, M.D., Dundee.

[At the meeting of the Provincial Medical and Surgical Association, held at York in August last, Dr Jeffreys of Liverpool introduced to the profession an herb called mattico, from S. America, as a styptic. A short account of it appeared in *The Lancet*, January 1839.— *Vide* Monthly Journal, September 1841, p. 689.]

The mattico has been very often used by me in the Dundee Infirmary as an external styptic, but I have not as yet used it internally. It has been very often used to stop the bleeding from leech bites, and uniformly with the most decided success. Leeches were applied, by his own desire, inside the nostrils, to our house surgeon, a stout, florid young man, with head symptoms in fever. The bleeding, which was profuse, could not be stopped by cold applications to the head, plugging, &c.; but the mattico, in leaf, applied over the bites, and pressed on with the point of the finger, proved immediately successful. The application of the leaf caused increased heat and throbbing for five minutes, when all unpleasant symptoms went off. The mattico was applied to a man with a wound of the right temple, in whom a considerable branch of the temporal artery had been divided; the wound was pressed, and a compress and bandage applied, but still the blood burst out. Cold water was several times had recourse to, still the bleeding returned after a while; at last the mattico was used. I stuffed the wound with the powder, but found that it was washed away from the wound in the vessel; I then pressed in several pieces of the leaves, holding them firmly for some time with the point of the finger; and the result was, that we had no more hemorrhage. We had a somewhat similar case of a man with a wound of a branch of the palmar artery, which resisted graduated compression and bandages, and in which the mattico was used with the best success.—Abridged from *Prov. Med. and Surg. Journal*, June 18, 1842.

Phloridrine, a New Medicine.

Phloridrine is a new medicine, which is now very highly spoken of by French practitioners, as a useful adjunct to cinchona preparations, and has been used for some years in Germany, Poland, and France. It is extracted from the bark of the roots of the apple and wild cherry trees; and is thus prepared.—The bark of the recent roots is boiled with water sufficient to cover them, for half an hour. This is poured off, and the same quantity is again used; these two fluids are mixed together, and at the end of six hours deposit the phloridrine, in the form of a deep-red velvety-looking matter. M. Lebandy, editor of the *Journal des Connaissances Médico-Chirurgicales*, says, "its efficiency is so decided, that we cannot hesitate to class it with the most powerful febrifuges; and it has this advantage over quinine, that it never

induces gastralgia."—*Braithwaite's Retrospect*, No. 5, (Jan. to June 1842,) p. 119.

Emmenagogue Solution of Chloro-Aurate of Ammonia. By M. Bouchardat.

M. Bouchardat recommends the following as an emmenagogue :—

Chloro-aurate of ammonia, ten grains.
Distilled water, 300 scruples.
Alcohol (36°), 300 scruples.

Make a solution, to be preserved in a well-stoppered bottle.

This preparation is used with much advantage in cases of amenorrhœa and dysmenorrhœa, arising from debility, and is far superior to other preparations of gold, such as, for instance, the cyanuret of that metal. It is given morning and evening in the dose of a tea-spoonful in a cupful of pure water duly sweetened. The chloro-aurate of ammonia is obtained by dissolving one part by weight of the per-chloruret of gold, with two parts by weight of the hydrochlorate of ammonia in a sufficient quantity of distilled water, aiding the solution by the addition of a few drops of nitro-muriatic acid (aqua regia). The compound salt must be afterwards dried by a gentle heat.—*Annuaire de Thérapeutique*, as quoted in *Prov. Med. and Surg. Journal*, July 2, 1842.

Preservation of Nitrate of Silver. By M. Duméril.

M. Duméril has for a long time employed a very simple process for preserving the nitrate of silver from the injurious effects of exposure to the air when run into sticks. It consists in merely coating the caustic with engraver's sealing wax, which contains a large quantity of shellac. This wax adheres very well, and forms a strong and smooth varnish, as it were, which remains unaffected by the atmosphere. Thus protected, the nitrate no longer stains the fingers, injures the caustic case, nor is in any way changed by the moisture in the air, possesses a greater degree of solidity, and at the same time the process is of exceeding service in practice, inasmuch as when wanted for use, a small part only of the caustic need be uncovered by means of a penknife, so that its application can be restricted to the part where it is required. This is of peculiar utility in ulceration of the throat, apthae, fissures, &c.—*Ibid.*

FORENSIC MEDICINE.

A Large Company Poisoned by Spoiled Meat. By Dr Sigg.

A fête was given in Andelfingen, in the Canton of Zurich, in the month of June 1839, at which about 600 people were present, who all partook more or less of the repast provided, which consisted of cold roast veal and ham. As they returned home in the evening, some were seized with vomiting; next day, a greater number complained of general uneasiness, sickness, and diarrhœa; and in about eight or ten days, almost all those who were present were confined to bed. The following is the course the disease ran. From the first, but chiefly from the fifth to the sixth day, those affected began to complain of uneasiness, lassitude, more or less headache, slight rigors, loaded tongue, metallic taste in the mouth, eructations, and vomiting alternating with diarrhœa, general feebleness, want of sleep, excessive thirst, giddiness, and imperfect vision. These symptoms continued from six to eight days,

at the end of which period, more than a fourth of those seized had recovered, generally without any treatment, after a copious perspiration. In others, again, the symptoms were more severe, the headache was greater, the pupils were dilated, the skin was hot and dry, and colic, sometimes with constipation, and at others with diarrhœa, supervened. In others, again, the face and sclerotica were highly injected. In those who suffered most, hoarseness, with difficulty of breathing and oppression at the chest, came on, from the fourteenth to the seventeenth day. As the abdominal symptoms abated, the patients got better. In the fatal cases, the intellectual faculties were affected, a petechial eruption appeared in the mouth, the breathing became worse, the skin more hot and dry, the belly tympanitic, and the stools were frequently bloody. At the post-mortem examinations in four individuals, who sank under the disease, the mucous membrane of the ileum and cœcum, but especially of the stomach, was found highly inflamed; and in the latter organ it was softened, and easily detached by the handle of the scalpel; some of the mucous follicles in the ileum and cœcum were ulcerated. From the 10th to the 20th of June, out of the 600 who were present at the fête, 444 were affected; of these, 370 were from 20 to 50 years of age; and 74, from 14 to 19 years old. A great many, however, were seized without applying for relief to a medical man, so that we may say that 550 out of the 600 suffered more or less from having been at the repast. Nine died, and all those who had severe attacks lost their hair. Several of those who attended the patients and who slept in the same room, had symptoms similar to those they were attending. The treatment consisted at first in the employment of an emetic, then of chlorated water, of leeches to the abdomen, and mercurial frictions. The symptoms above described bear a strong analogy to those of typhoid fever in their course, their post-mortem appearances, and in their contagious nature.—*Hufeland's Journ. der Pract. Heilkunde;* abridged from *Gazette Méd. de Paris,* July 2, 1842.

STATISTICS.

STATISTICAL TABLES OF THE ROYAL INFIRMARY OF EDINBURGH, OF THE PATIENTS ADMITTED BETWEEN 1ST JULY 1839, AND 1ST OCTOBER 1841. PREPARED BY PROFESSOR REID OF ST ANDREWS, lately Superintendent of the Royal Infirmary.

CONTENTS.—Table I. Patients admitted between 1st July 1839, and 1st October 1841, arranged according to their Diseases.—II. Number of Male and Female Patients during two years, with the results, and the ratio per cent. in each class of Cases, and the same Patients distributed according to the number admitted Monthly.—III. Number of Fever Patients admitted each Month during the same period.—IV. Fever Patients admitted from Leith and the Country for two years.—V. Fever Patients arranged according to Ages, &c., with Average Mortality at different Ages.—VI. Patients admitted with Phthisis Pulmonalis, ditto.—VII. Phthisical Patients admitted Monthly.—VIII. Cases of Organic Diseases of the Heart, arranged according to their Ages, &c.—IX. Ditto of Bright's Disease of Kidneys, ditto.—X. Ditto of Diabetes Mellitus, ditto.—XI. Ditto of Pneumonia, Bronchitis, Pleurisy, Asthma, and Rheumatism—their relative number, &c.—XII. Ratio per cent. of the Cases in the preceding Table.—XIII. Table of Fractures.—XIV. Ditto of Dislocations.—XV. Ditto of Hernia.—XVI. Ditto of Amputation on Extremities.—XVII. Ditto of Carcinomatous and Cerebriform Diseases.—XVIII. Ditto of Non-Malignant Tumours.—XIX. List of Operations.—XX. Register of the Weather.

TABLE

PATIENTS admitted into the ROYAL INFIRMARY between the 1st JULY

	Total Males and Females.	Males.						
		Total Males.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.
FEVERS—								
Continued Fever,	2188	1014	861	..	..	..	..	153
Intermittent ditto,	6	5	4	1	..	..	..	..
	2194	1019	865	1	..	..	..	153
EXENTHEMATA—								
Scarlatina,	54	18	13	..	1	..	..	4
Dropsy after Scarlatina,	7	2	1	..	..	..	..	1
Variola,	96	49	36	..	..	..	..	13
Rubeola,	17	3	3	..	..	..	..	..
Total Exenthemata,	174	72	53	..	1	..	..	18
NERVOUS SYSTEM—								
Apoplexy,	6	2	..	..	..	..	..	2
Cerebritis and Meningitis,	12	9	2	..	..	..	..	7
Abscess in Brain,	1	1	..	..	..	..	..	1
Ditto ditto, from Caries of Temporal Bone,	3	1	..	..	..	..	..	1
Meningitis, from Ostitis of Cranium,	2	1	..	..	..	..	..	1
Tumours in Brain,	6	4	..	..	..	..	..	4
Chronic Cerebritis and other affections of Brain,	34	25	4	8	..	3	1	9
Hydrocephalus,	3	2	..	..	..	..	..	2
Mania,	34	19	7	2	..	3	6	1
Delirium Tremens,	75	64	57	..	..	..	..	7
Hemiplegia,	31	21	3	14	..	1	..	3
Paraplegia,	23	17	1	12	..	3	..	1
More Partial Paralysis,	42	30	13	13	1	3	..	..
Epilepsy,	36	23	6	17	..	..	..	..
Disease of Spinal Cord,	5	4	2	1	..	..	..	1
Spinal Irritation,	7	3	1	1	..	1	..	..
Tetanus,	3	3	..	..	..	..	..	3
Convulsive Attacks,	1	1	..	1	..	..	..	..
Chorea,	2	2	2	..	..	..	..	..
Neuralgia,	33	12	6	6	..	..	..	..
Hysteria,	59	..	..	..	..	..	..	..
Cephalalgia,	27	10	8	1	..	1	..	..
Hypochondriasis,	23	16	4	8	3	1	..	..
Total Nervous Diseases,	468	270	116	84	4	16	7	43
CHEST DISEASES—								
Pneumonia,	139	100	61	4	..	..	..	35
Bronchitis,	297	163	98	42	..	..	..	23
Pleurisy, Acute and sub-acute,	75	45	38	2	..	..	..	5
Pleurisy, Chronic with effusion,	17	12	2	4	..	1	1	4
Laryngitis,	18	1	..	1	..	..	..	..
Phthisis Pulmonalis,	217	154	..	53	11	8	..	82
Haemoptysis,	10	5	3	2	..	..	..	..
Asthma,	50	44	4	31	1	1	..	7
Influenza,	14	6	6	..	..	..	..	..
Pertussis,	4	2	1	..	..	..	..	1
Hydrothorax without known cause,	1	1	..	1	..	..	..	..
Spurious Melanosis of Lungs,	1	1	..	..	..	..	..	1
Total Pulmonary Affections,	843	531	213	140	12	10	1	36

I.

1839, and the 1st October 1841, arranged according to their Diseases.

Females.										
Total Females.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.	Average residence in Hosp.	Mortality per cent.		
							Days.	Male.	Female.	
1174	1026	..	..	..	..	148	24½			Thi
1	..	1	..	..	..	..	23			ofthe
										includ
1175	1026	1	..	..	..	148	..	15·01	12·59	der C
										ed Fe
										that
38	33	..	..	..	..	3	22			in the
5	3	..	..	..	..	2	25			mary
47	40	..	..	..	..	7	23			under
14	14	..	..	..	..	..	16			ment
										other
102	90	..	..	..	..	12	22½	25·00	11·76	tions.
4	1	1	..	..	..	2	59			
3	1	..	..	..	..	2	26½			
..	..	..	..	..	..	..	42			
2	..	..	..	..	..	2	3½			
1	..	..	..	..	..	1	2½			
2	..	..	..	..	..	2	43			
9	..	2	..	..	1	6				
1	..	..	..	..	..	1	9			
15	6	3	..	3	3	..	33½			
11	10	..	..	..	..	1	17			
10	5	2	..	2	..	1	48			
6	2	2	..	1	..	1	72			
12	4	6	..	1	..	1	43			
13	1	11	..	1	..	..	50			
1	1	..	..	..	..	..	47			
4	2	1	1							
..	..	..	..	..	..	..	3			
..	..	..	..	..	..	..	57			
..	..	..	..	..	..	..	49			
21	14	7	..	..	..	..	25			
59	35	21	..	..	3	..	39			
17	14	2	1	..	..	..	18			
7	1	..	1	3	2	..	13			
198	97	58	3	11	9	20	34	15·92	10·1	
39	24	1	..	..	..	14	19	35·00	35·89	
134	84	26	..	..	4	20	27	14·11	14·92	
30	28	1	..	..	..	1	30½			
5	..	2	..	..	1	2				
17	11	5	..	..	1	..	39			
63	..	18	2	1	..	42	43			
5	5	..	..	..	..	..	44			
6	2	4	..	..	..	..	34			
8	8	..	..	..	..	..	14½			
2	1	1	..	..	..	..	19½			
309	*163*	*58*	*2*	*1*	*6*	79	32	29·58	25·56	

PATIENTS admitted into the ROYAL INFIRMARY between the 1st July

(*Table I*

	Total Males and Females.	Males.						
		Total Males.	Cured.	Relieved.	Advice or Desire.	No Change.	Irregular or improper.	Died.
Organic Disease of Heart,	148	98	..	51	2	..	..	45
Pericarditis, (not rheumatic,)	7	3	..	1	..	..	..	2
Angina Pectoris,	1	..	..	..	..	..	..	..
Dilatation of Aorta,	1	1	..	1				
Aneurism of Thoracic Aorta,	18	9	..	1	1	1	..	6
Total of Heart and Aorta,	175	111	..	54	3	1	..	53
Chylopoietic Viscera—								
Glossitis,	1	..	..	..	..	..	..	..
Epulis,	1	1	1					
Cynanche, Diseased Tonsils Sore throat, (not syphilitic,)	72	16	12	4	..	..	..	..
Œsophagus, (organic disease of,)	6	5	..	1	..	..	..	4
Diphtherite,	1	1	1					
Gastritis,	18	6	5	1	..	..	..	..
Gastrodynia, Cardialgia, and Pyrosis,	10	1	1	..	..	..	..	..
Dyspepsia,	164	80	51	26	1	1	1	.
Polydepsia,	2	2	2	..	..	..	..	..
Stomach, (organic disease of,	15	11	..	3	..	1	..	7
Hæmatemesis,	12	3	2	..	..	..	..	1
Peritonitis,	21	2	..	..	..	..	..	2
Gastro-enteritis,	10	6	4	1	..	..	..	1
Typhlo-enteritis,	2	1	1	..	..	..	..	..
Diarrhœa,	45	36	33	2	..	..	..	1
Cholera, (British,)	3	..	..	..	..	..	..	..
Dysentery,	18	13	8	3	..	..	..	2
Constipation,	41	16	16	..	..	..	..	..
Tympanitis,	3	..	..	..	..	..	..	..
Tormina,	1	1	1	..	..	..	..	..
Colica,	8	1	1	..	..	..	..	..
Colica Pictonum,	2	2	2	..	..	..	..	..
Ileus,	2	2	2	..	..	..	..	..
Worms,	5	3	1	..	2	..	..	..
Chronic Ulcerations and Constriction of Intestines,	14	4	1	..	..	..	..	3
Tabes Mesenterica,	2	2	..	2	..	..	..	..
Tumours in Abdomen, (nature not known,	14	9	1	5	1	1	..	1
Abscesses in Abdomen,	2	..	..	..	..	..	..	..
Hepatitis,	36	10	9	1	..	..	..	..
Abscess in Liver,	3	1	..	..	..	..	..	1
Liver, (organic disease of,)	21	10	..	3	.	1	..	6
Jaundice, (without known organic disease,)	13	6	5	1	..	..	..	..
Ascites, (without known organic affection,)	25	11	6	2	2	..	..	1
Pancreas, (disease of,)	2	2	..	..	..	..	..	2
Spleen, ditto,	3	3	..	..	..	..	..	3
Total of Chylopoietic Viscera,	598	267	166	55	6	4	1	35

1839, and the 1st OCTOBER 1841, arranged according to their DISEASES.

Continued.)

FEMALES.							Average residence in Hosp.	Mortality per cent.	
Total Females.	Cured.	Relieved.	Advice or Desire.	No Change.	Irregular or improper.	Died.	Days.	Male.	Female.
50	..	25	2	..	..	23	33		
4	1	..	..	..	..	3	6½		
1	..	1	..	..	..	..	15		
9	..	1	1	3	..	4	65		
64	1	27	3	3	..	30	36⅛	47·74	46·87
1	1								
56	52	3	..	1					
1	..	1	..	..	..	..	37		
12	10	1	1	..	..	..	22		
9	7	2	..	..	..	..	26		
84	65	16	1	2	..	..	24		
..	..	..	..	..	..	..	70⅛		
4	..	2	..	..	..	2	30		
9	6	3	..	..	..	..	17⅛		
19	14	..	1	..	..	4	34		
4	1	1	..	..	..	2	21⅛		
1	..	1	..	..	..	..	76½		
9	7	2	..	..	..	..	23⅛		
3	3	..	..	..	..	..	12		
5	3	1	..	..	..	1	25½		
25	24	1	..	..	..	..	22		
3	3	..	..	..	..	..	14		
..	..	..	..	..	..	..	16		
7	7	..	..	..	..	..	10⅛		
..	..	..	..	..	..	..	65		
..	..	..	..	..	..	..	13		
2	2	..	..	..	..	..	32⅛		
10	2	..	..	..	..	8	30		
..	..	..	..	..	..	..	41		
5	..	3	..	2	..	..	41⅛		
2	1	..	..	1	..	..	27½		
26	16	10	..	..	..	..	43⅛		
2	..	..	..	..	..	2	49		
11	..	1	..	..	..	10	38		
7	6	..	..	..	1	..	33		
14	6	5	..	..	2	1	33		
..	..	..	..	..	..	..	32½		
..	..	..	..	..	..	..	55		
331	236	53	3	6	3	30	27	13·10	9·06

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PATIENTS admitted into the ROYAL INFIRMARY between the 1st July

Table I.

	Total Males and Females.	Males.						
		Total Males.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.
Genito-Urinary Organs—								
Diuresis,	7	3	2	1	..	..	..	..
Bright's disease of Kidneys,	77	42	..	24	..	2	..	16
Nephritis,	1	..	..	..	..	..	..	..
Nephralgia,	1	..	..	..	..	..	..	..
Bladder,	31	28	8	9	4	4	..	3
Prostate,	6	6	..	1	..	3	..	2
Calculus Vesicæ, 12 Gravel, 1	13	13	4	..	2	3	..	4
Stricture of Urethra,	48	48	26	12	1	1	5	3
Hernia Humoralis, and Enlarged Testicles,	35	35	30	3	1	..	1	..
Hydrocele,	30	30	22	4	3	..	..	1
Recto-Urethral Fistula,	1	1	..	..	..	1	..	..
Fistula in Perineo,	4	4	2	1	1	..	..	..
Recto-Vaginal Fistula,	1	..	..	..	..	..	..	..
Ovaries, (diseases of,)	4	..	..	..	..	..	..	..
Metritis,	3	..	..	..	..	..	..	..
Uterus, (organic diseases of,)	19	..	..	..	..	..	..	..
Vulva, (cancer of,)	2	..	..	..	..	..	..	..
— (tumour of,)	1	..	..	..	..	..	..	..
— (ulceration of,)	2	..	..	..	..	..	..	..
Uterus, (prolapsus of,)	4	..	..	..	..	..	..	..
Menorrhagia,	10	..	..	..	..	..	..	..
Dysmenorrhœa,	3	..	..	..	..	..	..	..
Leucorrhœa,	15	..	..	..	..	..	..	..
Amenorrhœa,	54	..	..	..	..	..	..	..
Phymosis,	19	19	17	..	1	1	..	..
Paraphymosis,	1	1	1	..	..	..	..	..
Syphilis, (primary,)	71	66	55	2	2	1	6	..
— (secondary,)	126	85	55	21	7	..	2	..
— (kind not stated,)	18	16	10	4	..	..	2	..
Gonorrhœa,	12	10	9	1	..	..	..	..
Total of Genito-Urinary Organs,	619	407	241	93	22	16	16	29
Rheumatism,	339	200	159	33	4	1	3	..
Pleurodynia,	36	16	15	1	..	..	..	..
Lumbago,	16	14	11	3	..	..	..	..
Sciatica,	22	20	12	6	1	..	1	..
Gout,	1	..	..	..	..	..	..	..
	414	250	197	43	5	1	4	..
Skin Diseases—								
Erysipelas, Diffuse Inflammation of Cellular Tissue, and Erythema,	137	69	56	..	..	..	..	13
Urticaria,	6	2	2	..	..	..	..	..
Prurigo,	1	1	1	..	..	..	..	..
Lepra,	17	5	1	2	2	..	..	..
Psoriasis,	29	16	11	3	1	1	..	..
Pityriasis,	3	..	..	..	..	..	..	..
Carry forward,	193	93	71	5	3	1	..	13.

1839, and the 1st October 1841, arranged according to their Diseases.

Continued.)

Females.							Average residence in Hosp.	Mortality per cent.		
Total Females.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.	Days.	Male.	Female.	
4	1	3	..	..	..	..	100½			
35	..	13	..	2	..	20	43			Of the cases of Calculus Vesicæ, two only were natives of Edinburgh.
1	1	..	..	..	..	..	73			
1	..	1	..	..	..	..	80			
3	2	1	..	..	..	..	24			
..	..	..	..	..	..	..				
..	..	..	..	..	..	..	52			
..	..	..	..	..	..	..	24½			Of the 8 persons admitted with Stricture who died, two had Extravasation of Urine on admission, and one died of some cerebral affection.
..	..	..	..	..	..	..				
..	..	..	..	..	..	..	27			
..	..	..	..	..	..	..	45			
1	..	..	..	1	..	..	38			
4	..	3	..	..	..	1	19½			
3	1	1	..	1						
19	3	7	1	2	..	6	32			
2	1	..	..	1	..	..	23½			The case of Hydrocele died of Bright's disease.
1	1	..	..	..	..	..				
2	2	..	..	..	..	..				
4	1	2	1							
10	9	1	..	..	..	..	18			
3	1	2	..	..	..	..	20			
15	7	4	1	..	3	..	29			
54	26	24	..	..	4	..	29			
..	..	..	..	..	..	..	28			
..	..	..	..	..	..	..				
5	1	..	..	..	4	..	38			
41	18	14	4	..	3	2				
2	1	1	..	..	..	..				
2	1	..	..	..	1	..	28			
212	77	77	7	7	15	29	34	7·12	13·67	It is questionable whether the cases of Secondary Syphilis ought to be included under this head, as the disease had left the genital organs.
139	108	24	3	..	1	3	33			
20	19	1	..	..	..	..	10			
2	2	..	..	..	..	..	19			
2	..	2	..	..	..	..	32			
1	1	..	..	..	..	..	28			
164	130	27	3	..	1	3	31	0·00	1·82	
68	60	..	1	..	..	7	19½	18·84	10·29	
4	3	..	1	..	..	..	12			
..	..	..	..	..	..	..	20			
12	6	4	1	1	..	..	48			
13	9	3	1	..	..	..	44			
3	3	..	..	..	..	..	39			
100	81	7	4	1	..	7				

PATIENTS admitted into the ROYAL INFIRMARY between the 1st July

(*Table I.*

	Total Males and Females.	Males.						
		Total Males.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.
Skin Diseases.								
Brought forward—	193	93	71	5	3	1	..	13
Pompholyx,	1	..	..	..	..	..	..	..
Impetigo,	15	11	9	1	..	..	1	..
Porrigo,	21	7	3	1	..	1	2	..
Scabies,	27	15	15	..	..	..	..	..
Ecthyma,	11	6	6	..	..	..	..	..
Herpes,	3	1	1	..	..	..	..	..
Eczema,	8	5	3	2	..	..	..	..
Rupia,	6	2	2	..	..	..	..	..
Acne,	4	1	1	..	..	..	..	..
Sycosis,	1	1	..	1	..	..	..	..
Lupus,	9	4	1	3	..	..	..	..
Skin disease, (kind not stated,)	10	7	5	2	..	..	..	..
Total of Skin Diseases,	309	153	117	15	3	2	3	13
Diabetes Mellitus,	15	14	..	10	1	..	..	3
Scrofula,	21	14	6	4	1	2	1	..
Purpura Hemorrhagica,	3	3	3	..	..	..	..	..
Anasarca, (cause not known,)	9	1	1	..	..	..	..	..
Œdema, ditto ditto,	7	5	4	..	1	..	..	..
Poisoning from Opium,	9	5	5	..	..	..	..	..
Ditto Laburnum Seeds,	1	1	1	..	..	..	..	..
Chlorosis,	1	..	..	..	..	..	..	..
Cachexia,	5	1	1	..	..	..	..	..
Old Age,	2	2	..	..	..	..	2	..
Convalescing from other diseases,	4	..	..	..	..	..	..	..
Inanition,	6	2	2	..	..	..	..	..
Mercury, (direct effects of,)	2	2	2					
Intoxication, (effect of,)	7	3	3	..	..	..	..	..
No disease,	6	3	..	..	..	..	3	..
Diseases of Eye—								
Corneitis and Inflammation of Cornea,	26	22	13	3	5	..	1	..
Conjunctivitis,	49	32	25	7	..	..	..	..
Iritis,	33	21	18	2	..	1	..	..
Amaurosis,	16	13	1	10	..	2	..	..
Cataract,	26	16	5	7	1	3	..	..
Wounds of Eye,	9	9	5		1	1	1	
Hydro-Ophthalmia,	1	..	..	..	..	..	..	..
Conical Corneæ,	2	2	..	..	..	2		
Hypopium,	2	1	1	..	..	..	..	..
Staphyloma,	4	..	..	..	..	..	..	..
Dislocation of lens,	1	1	..	1				
Adhesion of Iris to Capsule,	1	1	..	..	..	1		
Atresia Pupillæ,	1	1	..	1				
Diseases of Eye, (kind not stated,)	4	4	1	2	..	1		
Ophthalmia Tarsi,	1	1	..	..	1			
Entropium,	1	..	..	..	..	..	..	.
Carry forward,	177	124	69	34	8	11	2	..

1839, and the 1st October 1841, arranged according to their Disease
Continued.)

Females.							Average residence in Hosp.	Mortality per cent.	
Total Females.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.	Days.	Male.	Female.
100	81	7	4	..	..	7			
1	1								
4	2	2	..	..	..	..	30		
14	7	5	2	..	..	..	40		
12	12	..	..	..	..	..	25½		
5	5	..	..	..	..	..	26		
2	2	..	..	..	..	..	41		
3	2	1	..	..	..	..	37½		
4	2	2	..	..	..	..	45		
3	1	1	1	..	..	..	46		
..	..	..	..	..	..	..	26		
5	1	4	..	..	..	..	31		
3	2	1	..	..	..	..	40		
156	118	23	7	1	..	7	29½	8.49	4.48
1	..	1	..	..	..	..	93		
7	4	2	1	..	..	..	48		
..	..	..	..	..	..	..	27		
8	6	2	..	..	..	..	31½		
2	..	1	..	..	1	..	20		
4	4	..	..	..	..	..	14		
..	..	..	..	..	..	..			
1	1	..	..	..	..	..			
4	1	2	..	..	..	1			
4	4								
4	4	..	..	..	..	..	31		
4	4								
3	..	..	..	..	3				
4	2	2							
17	5	12							
12	10	2							
3	1	2							
10	5	4	..	1					
1	..	1							
1	..	1							
4	3	1							
1	1								
53	27	25	..	1					

PATIENTS admitted into the ROYAL INFIRMARY between the 1st July

(*Table I.*

	Total Males and Females.	Males.						
		Total Males.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.
Eye Diseases Brought forward—	177	124	69	34	8	11	2	..
Encephaloid Tumour of Eye,	1	..	..	..	..	..	..	..
Strabismus,	7	5	4	..	..	..	1	..
Fistula Lachrymalis,	4	2	2	..	..	..	..	..
Total of Eye diseases,	189	131	75	34	8	11	3	..
Ear,	5	3	..	2	..	..	1	..
Nose,	4	3	3	..	..	..	..	..
Neuroma and enlargement of Nerves,	5	2	1	..	..	1	..	..
Abscesses,	96	51	39	8	2	1	..	..
Carbuncle, Furunculus, and Anthrax,	25	13	13	..	..	..	..	..
Paronychia and Onychia,	21	11	10	1	..	..	..	..
Locomotive Organs—								
Inflammation of Joints,	124	67	31	20	13	..	1	2
Loose Cartilages in Joints,	6	5	3	2	..	..	..	..
Anchylosis,	3	2	1	..	1	..	..	..
Dislocations, (simple and compound,)	28	26	17	1	4	2	..	2
Fractures, do. do.	243	182	145	..	13	..	..	24
Sprains,	35	16	15	1	..	..	..	..
Rupture of Rectus Femoris Muscle,	2	1	1	..	..	..	..	..
Displacement of Muscles,	2	2	..	..	2			
Inflammation of Bursæ,	23	10	7	2	1	..	..	..
Periostitis,	53	28	25	1	1	..	1	..
Ostitis and Exostosis,	9	6	3	3	..	..	..	..
Caries,	54	35	15	6	6	2	..	6
Necrosis,	32	26	12	3	8	1	1	1
Osteo-sarcoma,	1	1	1	..	..	..	..	..
Spina-ventosa,	1	..	..	..	..	..	..	..
Mollities Ossium,	1	..	..	..	..	..	..	..
Club Feet,	16	10	8	..	1	1	..	..
	632	417	264	39	50	6	3	35
Injuries of Head,	102	66	47	..	2	..	..	17
Wounds and injuries of other parts,	265	189	156	11	6	..	2	14
Ulcers,	355	202	168	17	10	1	3	3
Burns and Scalds,	95	39	26	2	3	..	..	8
Cicatrices from Burns,	4	2	..	1	1	..	..	..
Contractions of parts not from Burns,	7	3	2	..	..	..	1	..
Lost parts,	2	..	..	..	..	..	..	..
Carcinomatous affections,	72	39	15	2	9	6	..	7
Tumours not malignant,	26	13	10	2	1	..	..	..
Enlarged and inflamed Glands,	13	7	3	1	2	1	..	..
Bronchocele,	1	..	..	..	..	..	..	..
Warts not reported Syphilitic,	4	3	2	..	1	..	..	..
Gangrene of Extremities,	9	6	3	..	..	..	..	3

1839, and the 1st OCTOBER 1841, arranged according to their DISEASES.

(Continued.)

FEMALES.							Average residence in Hosp.	Mortality per cent.		
Total Females.	Cured.	Re-lieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.	Days.	Male.	Female.	
53	27	25	..	1						
1	..	..	..	1						
2	..	..	1	..	1					
2	1	..	..	1						
58	28	25	1	3	1	..	25½			
2	1	1	..	..	..	..	14½			
1	1	..	..	..	..	..	5			
3	2	..	..	..	..	1*	29			* Died ningit
45	39	3	1	..	..	2	21			
12	11	..	..	..	..	1	24			
10	8	..	2	..	..	..	18			
										Thi not in the and of the motiv gans. exam many wound injuri have classe this h
57	41	10	2	..	..	4	45½†			
1	..	1	..	..	..	..	83			
1	..	..	1	..	..	..	35			
2	2	..	..	..	..	..	16½			
61	47	..	5	..	..	9	36			
19	19	..	..	..	..	..	14½			
1	..	1								
13	13									
25	13	12	..	..	..	..	27			
3	2	1	..	..	..	..				† Ur flamm the jo are i cases bus ec gelati gener the s memb and o chroni tions synovi memb
19	8	6	2	1	..	2				
6	1	1	3	1	..	..	46½			
..	..	..	..	..	..	..				
1	1	..	..	..	..	..				
1	..	..	1	..	..	..				
6	3	1	1	1						
216	150	33	15	3	..	15	37½	8·39	6·94	
36	28	..	3	..	..	5	14½‡	25·75	13·88	‡ Fou of inj the he within ty-fou after sion.
76	69	1	3	..	2	1	20			
153	110	31	8	..	4	..	36½			
56	30	5	2	..	2	17	41			
2	..	1	..	1	..	..	45			
4	2	2	..	..	..	..	17			
2	2	..	..	..	..	..	193			
33	11	..	15	5	..	2	22½			
13	10	..	2	..	..	1	37½			
6	3	2	1	..	..	..	58			
1	..	..	1							
1	1	..	..	..	..	..	14			
3	2	1								

PATIENTS admitted into the ROYAL INFIRMARY between the 1st Ju

(Tabl

	Total Males & Females.	Males.								
		Total Males.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or Improper.	Died.	Average Mortality.	Mortality
Frost Bite . .	4	3	2	..	1	..	..	..	..	
Hare Lip, . .	8	5	5	..	..	..	..	..	..	
BLOOD-VESSELS OF EXTREMITIES—										
Popliteal Aneurism, .	3	3	2	..	..	..	..	1	..	
Femoral Do. from Wound	1	1	1	..	..	..	..	..	..	
False Aneurism of Ulnar Artery, .	1	1	1	..	..	..	..	..	..	
Aneurism by Anastomosis, . .	9	7	7	..	..	..	..	..	..	
Varicose Humeral Aneurism, . .	2	1	1	..	..	..	..	..	..	
Phlebitis, . .	3	2	2	..	..	..	..	..	..	
Varicose Veins, .	16	4	1	2	1	..	..	..	..	
Total, . . .	35	19	15	2	1	..	..	1	..	
Hernia, . .	18	11	5	..	3	1	..	2	..	
Hemorrhoids, . .	22	18	12	1	3	..	2	..	..	
Fistula in Ano, .	25	22	19	1	2	..	..	..	..	
Fissure of Anus, .	3	2	2	..	..	..	..	..	..	
Prolapsus Ani, .	2	..	..	..	..	..	..	..	..	
Stricture of Rectum, .	1	1	..	..	1					
Injury of Rectum,	1	1	1							
Total, . . .	54	44	34	2	6	..	2	..	..	
MISCELLANEOUS—										
Induration of Skin and Cellular Tissue,	4	3	3	..	..	..	..	..	..	
Fistulous opening into Lungs, . .	1	..	..	..	..	..	..	..	..	
Do. Do. Trachea,	1	..	..	..	..	..	..	..	..	
Do. Do. between Mouth and Nose,	1	1	..	..	1					
Deep Pain in Neck,	1	1	1							
Left the Infirmary without the disease and result being returned, . .	17*	7	..	..	..	..	..	..	..	
Total of all the cases,	7969	4433	2918	613	167	80	53	595	1 in 7	13

Number of Patients admitted before the 1st July, 1839, still under treatment at this period, and which are not included in the above table, 285.

* As the exact result of these seventeen cases could not be ascertained, there will consequently be a difference to that extent between the sum total and the sum of all the results

1839 and the 1st October 1841, arranged according to their Diseases.

Continued.)

Females.										
Total Females.	Cured.	Relieved.	Desire or Advice.	No Change.	Irregular or improper.	Died.	Average residence in Hosp. Days.	Average Mortality.	Mortality per cent.	
1	1	.	..	..	..	..	57½			
3	3	..	..	..	..	..	12			
..	..	..	..	..	..	..	47			
..	..	..	..	..	..	..	36			
2	1	..	1	..	..	..	32			
1	1	..	..	..	..	..	24			
..	..	..	..	..	..	..	24			
1	1	..	..	..	..	..				
12	9	1	1	..	1	..				The Aneurisms by Anastomosis were not all placed in the extremities.
16	12	1	2	..	1	..	29			
7	5	..	..	..	..	2	15½			
4	2	..	2							
3	3									
1	1									
2	1	..	1							
10	7	..	3	..	..	..	21			
1	1	..	..	..	..	..	51½			
1	..	..	..	1						
1	..	..	..	1						
10										
3536	2503	438	88	43	48	406	31	1 in 8$\frac{144}{163}$	11·48	

Number of patients still in the Infirmary on the 1st October 1841, and which are not included in the above table, 293.

TABLE II.

Showing the number of Male and Female Patients entered and treated in the medical and surgical wards of the Royal Infirmary, from 1st July 1839 to 1st July 1841; the number of cures, deaths, and of other results in each respective class; distinguishing those below ten years of age in both sexes collectively, and exhibiting the ratio per cent. in each class of cases.

Wards.	Both Sexes.		Males.								Females.							
	Total Cases.	Ratio per cent.	Total Cases	Ratio per cent.	Cures.	Ratio per cent.	Deaths.	Ratio per cent.	Other Results.	Ratio per cent.	Total Cases.	Ratio per cent.	Cures.	Ratio per cent.	Deaths.	Ratio per cent.	Other Results.	Ratio per cent.
Medical, . . .	4768	60·8	2438	51·13	1460	59·88	431	17·67	547	22·43	2330	48·86	1615	69·31	303	13·00	412	17·68
Surgical, . . .	2131	30·9	1412	66·25	977	69·19	99	7·01	336	23·79	719	33·74	482	67·03	39	5·42	198	27·53
	6899		3850	53·80	2437	63·29	530	13·76	883	22·93	3049	44·19	2097	68·77	342	11·21	610	20·006
Children in both wards, below 10 years of age,	393		219	55·72	167	76·25	25	11·41	27	12·32	174	44·27	139	79·88	15	8·62	20	11·49
	7292		4069	55·80	2604	63·99	555	13·63	910	22·36	3223	44·19	2236	69·37	357	11·07	630	19·54

The numbers in this table will not tally exactly with those resulting from the distribution of the same patients in the table in which they are arranged according to the nature of the diseases under which they laboured; for, as it sometimes happens, that when a patient is convalescing from one disease, he is attacked with another; and when this occurred in a marked manner, the same patient was placed in the list of two different diseases.

The preceding Patients distributed according to the Number admitted Monthly.

Months.	Entries.	MEDICAL.								SURGICAL.								CHILDREN Under Ten Years of Age.							
		MALES.				FEMALES.				MALES.				FEMALES.				MALES.				FEMALES.			
		No.	Cures	Deaths.	Other Results.	No.	Cures	Deaths.	Other Results.	No.	Cures	Deaths.	Other Results.	No.	Cures	Deaths.	Other Results.	No.	Cures	Deaths.	Other Results.	No.	Cures	Deaths.	Other Results.
1839.																									
July,.....	277	87	49	11	27	69	41	6	22	69	50	5	14	42	24	2	16	5	3	2	0	5	5	0	0
August,.....	284	90	55	13	22	72	41	8	23	75	47	5	23	36	24	1	11	9	6	2	1	2	2	0	0
September,	266	80	51	14	15	72	51	6	15	63	34	3	26	28	20	2	6	16	12	0	4	7	5	1	1
October,....	224	78	41	18	19	57	40	11	6	51	35	1	15	23	14	2	7	9	6	2	1	6	5	0	1
November,	316	112	56	27	29	98	66	14	18	58	41	3	14	35	23	0	12	7	6	0	1	6	5	0	1
December,	299	110	65	20	25	104	71	17	16	50	43	1	6	25	20	2	3	6	6	0	0	4	4	0	0
1840.																									
January,...	330	115	74	18	23	109	83	5	21	54	40	6	8	34	23	3	8	11	10	0	1	7	5	2	0
February,..	283	84	52	16	16	100	66	8	28	53	39	5	9	27	21	0	6	7	7	0	0	12	9	1	2
March,.....	317	98	61	15	22	112	80	16	16	60	45	6	9	32	23	2	7	9	8	1	0	6	3	0	3
April,.....	294	103	61	19	23	90	63	12	15	63	39	4	20	26	14	2	10	10	8	2	0	2	0	2	0
May,.....	293	105	71	14	20	93	66	15	12	49	31	2	16	26	18	0	8	13	11	1	1	7	7	0	0
June,.....	287	90	56	17	17	94	58	8	28	51	35	4	12	34	24	1	9	11	9	1	1	7	5	0	2
July,.....	319	113	65	18	30	87	61	9	17	67	49	6	12	34	26	1	7	9	8	0	1	9	7	0	2
August,.....	303	98	53	14	31	101	55	19	27	58	43	2	13	32	19	2	11	5	3	2	0	9	5	3	1
September,	290	88	48	20	20	79	57	9	13	72	49	4	19	36	22	1	13	8	5	1	2	7	5	1	1
October,....	275	103	62	24	17	76	54	6	16	55	39	6	10	33	21	1	11	3	2	1	0	5	4	1	0
November,	290	97	60	20	17	104	72	9	23	53	34	5	14	20	14	2	4	5	4	0	1	11	7	1	3
December,	328	116	72	22	22	112	87	15	10	53	39	1	13	26	17	3	6	11	6	2	3	10	9	1	0
1841.																									
January,...	405	132	80	24	28	145	99	31	15	65	39	5	21	32	20	3	9	17	13	2	2	14	11	1	2
February,..	341	124	83	19	22	135	93	25	17	50	34	4	12	20	18	0	2	8	6	0	2	4	3	1	0
March,.....	329	99	58	17	24	122	98	11	13	56	43	6	7	32	20	2	10	12	8	2	2	8	8	0	0
April,.....	263	87	52	13	22	85	60	12	13	51	33	8	10	22	11	3	8	10	7	1	2	8	7	0	1
May,.....	350	115	69	14	32	111	77	20	14	74	53	6	15	35	27	3	5	6	5	1	0	9	9	0	0
June,.....	329	114	66	24	24	103	76	11	16	62	43	1	18	29	19	1	19	12	8	2	2	9	9	0	0
	7292	2438	1460	431	547	2330	1615	303	412	1412	977	99	336	719	482	39	198	219	167	25	27	174	139	15	20

TABLE VI.

Exhibiting the Patients admitted with Phthisis Pulmonalis arranged according to their Ages, and including one Female Patient, admitted with Fever, who was dismissed relieved.

Years of Age.	Total Males & Females.	Males.						Females.					
		Total Males.	Died.	Relieved.	Desire.	Advice.	No Change.	Total Females.	Died.	Relieved.	Desire.	Advice.	No Change.
10—20	27	20	9	5	3		3	7	4	2	1		
20—30	86	53	24	21	5	1	2	33	22	10	1		
30—40	49	35	21	12	1		1	14	10	4			
40—50	43	34	21	12			1	9	6	2	..	..	1
50—60	8	8	6	1	1								
60—70	5	5	2	3									
	218	155	82	54	10	1	7	63	42	18	2		1
Admitted between 1st July 1839, and 1st July 1841,	210	151	80	53	10	1	7	59	39	18	1		1
Of these there were admitted from different parts of the country,	51	47	24	20	1	2		4	2	2			

Of the above Patients discharged relieved, 19 were returned as Incipient Phthisis.

Two of those that died (one male aged 50 and a female aged 20) ought rather to have been classed under the head of Pneumonia, as the condensation and excavations found in the Lungs were almost entirely the result of Chronic Pneumonia.

Average residence of Phthisical Patients in the Infirmary, 43 days.

TABLE VII.

Showing the number of Phthisical Patients admitted each Month for Two Years.

Months.	Males.	Females	Months.	Males.	Females.	Total.
1839.			1840.			
July	5	1	July	6	2	14
August	7	1	August	5	2	15
September	7	1	September	7	4	19
October	3	3	October	8	4	18
November	12	4	November	7	2	25
December	5	3	December	5	2	15
1840.			1841.			
January	7	6	January	8	3	24
February	2	6	February	4	2	14
March	3	4	March	5	4	16
April	6	1	April	10		17
May	6	1	May	7	2	16
June	7		June	9	1	17
	70	31		81	59	210

TABLE VIII.

Cases of Organic Disease of Heart admitted between 1st July 1839, and 1st October 1841, arranged according to the Ages of the Patients, and including one Female admitted with Continued Fever.

Ages.	Total Males and Females.	Total Males.	Relieved.	Died.	Desire.	Total Females.	Relieved.	Died.	Desire.
1—10	1	..	..	..	..	1	..	1	
10—20	11	6	3	2	1	5	4	1	
20—30	29	19	11	8	..	10	4	5	1
30—40	29	18	5	13	..	11	4	6	1
40—50	33	20	11	9	..	13	7	6	
50—60	25	18	11	7	..	7	5	2	
60—70	20	16	10	5	1	4	2	2	
70—80	1	1	..	1					
	149	98	51	45	2	51	26	23	2
Of the above patients there were admitted between 1st July 1839, and 1st July 1841,	136	89	46	41	2	47	23	22	2
Of these there were admitted from the country,	24	21	11	9	1	3	1	2	

Five of those dismissed relieved were again re-admitted with an aggravation of their disease, so that they are twice entered in the above table.

TABLE IX.

Patients admitted with Bright's Disease of the Kidneys, between the 1st July 1839, and 1st October 1841, arranged according to their Ages.

Years of Age.	Total Male and Female.	Males.					Females.				
		Total Males.	Relieved.	Died.	Desire.	No Change.	Total Females.	Relieved.	Died.	Desire.	No Change.
10—20	14	9	5	3	..	1	5	2	3		
20—30	21	6	3	3	..	..	15	6	7	..	2
30—40	12	5	4	1	..	..	7	2	5		
40—50	21	16	9	6	..	1	5	3	2		
50—60	6	4	2	2	..	..	2	..	2		
60—70	3	2	1	1	..	..	1	..	1		
	77	42	24	16		2	35	13	20		2
Of the above patients there were admitted between the 1st July 1839, and 1st July 1841,	71	40	24	15	..	1	31	13	16	..	2
Of these there were admitted from the country,	15	11	9	2	..	..	4	3	1		

Four of those dismissed relieved, were afterwards re-admitted, and treated for the same disease.

TABLE X.

Patients admitted with Diabetes Mellitus, between the 1st July 1839, and 1st July 1841, arranged according to their ages.

Years of Age.	Total Males and Females.	Males.			Females.			Average Residence in Hospital.
		Total Males.	Relieved.	Died.	Total Females.	Relieved.	Died.	Days.
20—30	6	5	4	1	1	1		93
30—40	5	5	3	2				
40—50	2	2	2					
50—60	2	2	2					
Total.	15	14	11	3	1	1		

Every one of the patients afflicted with Diabetes Mellitus was from the country, and not from any particular district. One of those who died had Phthisis; one had Pneumonia; the third had Pleurisy and Inflammation of Mucous Membrane of Intestines.

TABLE XI.

Exhibiting the relative number of Patients admitted with Pneumonia, Bronc Pleurisy, (acute and subacute,) Asthma, and Rheumatism, from the 1st July to the 1st July 1841. The year has been divided into quarters, and the patient mitted in the corresponding quarter of each year have been added together.

	Total Males and Females.	Males.							Females.						
		Total Males.	Cured.	Relieved.	Died.	Desire or Advice.	Irregular or Improper.	No Change.	Total Females.	Cured.	Relieved.	Died.	Desire or Advice.	Irregular or Improper.	
Pneumonia,	27	21	9	..	12	..	..		6	3	..	3			July, Aug
Bronchitis,	48	27	18	4	5	..	..		21	13	5	2	..	1	and Sept
Pleurisy,	12	8	6	..	2	..	..		4	3	..	..	..	1	ber 1839
Asthma,	9	9	..	9	..	..	..		..	..	..	..			1840.
Rheumatism,	68	39	30	6	..	2	1		29	22	6	..	1		
	164	104	63	19	19	2	1		60	41	11	5	1	2	
Pneumonia,	36	29	20	1	8	..	..		7	6	..	1			
Bronchitis,	82	43	24	9	10	..	..		39	28	6	4	..	3	October,
Pleurisy,	15	9	8	1	..	..	..		6	6	..	..			vember,
Asthma,	11	10	..	4	5	1	..		1	1	..	..			Decembe
Rheumatism,	82	51	40	7	..	2	1	1	31	24	4	2	..	1	1839 a
	226	142	92	22	23	3	1	1	84	65	10	7		4	1840.
Pneumonia,	33	25	17	1	7	..	..		8	6	..	2			
Bronchitis,	87	49	25	19	5	..	..		38	22	8	8			January,
Pleurisy,	16	9	6	2	1	..	..		7	7	..	..			bruary,
Asthma,	15	14	2	10	2	..	..		1	1	..	..			March
Rheumatism,	83	51	43	8		..	..		32	24	8	..			and 184
	234	148	93	40	15				86	60	16	10			
Pneumonia,	37	22	13	1	8	..	..		15	8	1	6			
Bronchitis,	67	34	24	7	3	..	..		33	19	6	6	..	2	April, M
Pleurisy,	17	9	7	2	..	..	..		8	7	..	1			and J
Asthma,	12	9	..	8	..	1	..		3	..	3	..			1840 and
Rheumatism,	78	41	34	6	..	1	..		37	30	4	1	2		1841.
	211	115	78	24	11	2			96	64	14	14	2	2	

TABLE XII.

Showing the Ratio per Cent. of the Patients admitted with Pneumo Bronchitis, Pleurisy, Asthma, and Rheumatism, in the different Quarte

Total for two years.	July, August, and September, 1839 and 1840.	Ratio per cent.	October, November, and December, 1839 and 1840	Ratio per cent.	January, February, and March, 1840 and 1841.	Ratio per cent.	April, May, and June, 1840 and 1841.	Ra pe cen
835	164	19·64	226	27·06	234	28·02	211	25·

Of the seven Patients stated to have died of Asthma, in two, the *immediate* c of death was Bronchitis; in one, recent Pneumonia; in one, Chronic Pneumonia one, Bronchitis, Pleurisy, and Bright's Disease of the Kidneys; in one, Bronc and Bright's Disease; in one, Bronchitis and Tubercles. Of the three Patients are stated to have died of Rheumatism, two died of acute Pericarditis, and on Dysentery.

TABLE XIII.

Showing the Fractures admitted between 1st July 1839, and 1st July 1

Fractures of the Cranium are included among Injuries of the Head.

	Total	Cured.	Relieved.	Died.	Resid. in Hosp. Days.	Males	Cured.	Relieved.	Died.	Resid. in Hosp. Days.	Females.	Cured.	Relieved.	Di
	219	173	18	28	36	161	129	13	19	37	58	44	5	

	Total	Cured.	Died.	Resid. in Hosp. Days.	Total Simple.	Cured.	Died.	Total Compound.	Males. Cured.	Males. Died.	Females. Cured.	Females. Died.
Femur,	55	42	13	48	51	41	10	4	1	1	..	2
Leg,	76	66	10	46	63	62	1	13	3	8	1	1
Humerus,	27	27	..	27	24	24	..	3	3			
Radius and Ulna,	17	17	..	21	16	16	..	1	..	..	1	
Ribs,	16	14	2									
Scapula,	3	3										
Clavicle,	9	9										
Patella,	4	4	..	..	..	..	..	2	1	..	1	
Pelvis,	3	1	2									
Jaw,	4	4										
Nasal Bones,	1	1										
Toes,	2	1	1									
Finger,	2	2										
	219	191	28	36	154	143	11	23	8	9	3	3

In the second Table, the Relieved are included among the Cured, having merely left the Hospital before the fractured ends of the bones were firmly united, and were almost entirely fractures of the upper extremities.

Of the three cases in which death occurred after compound fracture of the Femur, this was complicated with other injuries.

Of the cases in which death occurred after simple fracture of Femur, there were

4 after fracture of neck of Femur in aged females.
1 complicated with dislocation of Knee Joint, for which primary amputation was performed.
1 complicated with fracture into Knee Joint, and much effusion of blood into interior of Joint, for which primary amputation was performed.
1 was first simple, and afterwards became compound.
1 took Pneumonia, and died of that disease.
1 was much comminuted.
1 no particulars were returned.

10

Of the cases in which death occurred after compound fracture of Tibia and Fibula there were

3 after primary amputation.
3 complicated, with much laceration, and one of these died within twenty-four hours after admission.
1 took Delirium Tremens.
2 particulars not returned.

9

The two Patients who died from fracture of the Ribs were seized with Pneumonia, and one of them had also laceration of one of the Kidneys.

The Patient who died after fracture of a Toe, was seized with Gangrene, which extended up the Leg, and caused the death of the Patient.

TABLE XIV.

Showing the Dislocations admitted between 1st July 1839, and 1st July 1841.

	Total Males and Females.	Total Males.	Cured.	Relieved.	Advice.	No Change.	Died.	Total Females.	Cured.	Other Results.
Hip Joint,...	6	5	3	..	..	2	..	1	1	
Ankle,.....	3	3	2	..	..	..	1			
Shoulder, ...	8	8	7	..	..	1				
Elbow, ...	3	3	2	..	..	1				
Wrist, ...	1	..	..	..	..	..	..	1	1	
Clavicle,.....	5	5	3	2						
Vertebræ ...	2	2	..	1	..	..	1			
	28	26	17	3		4	2	2	2	

One of the Cases of Dislocation of the Hip Joint dismissed unreduced had been dislocated nine months before admission. The other had been dislocated seventy days.

The Patient who died from Dislocation of Ankle Joint had a severe compound dislocation, for which primary amputation of the leg was performed.

In another case, the dislocation was at first simple, and consisted of dislocation and fracture of the astragalus, but afterwards became compound.

The Dislocation of the Shoulder Joint dismissed unreduced was admitted 180 days after dislocation.

The Dislocation of the Elbow dismissed unreduced had been sixty days dislocated before admission.

Of the Dislocations of the Hip Joint, two were upon the Dorsum of the Ilium; two into the Foramen Ovale; one upon the Os Pubis; and one into the great Ischiatic Notch.

TABLE XV.

Showing the cases of Hernia admitted between the 1st July 1839 and 1st July 1841, and the number in which the contents of the sac when strangulated were returned by operation and by the taxis.

	Total Males and Females.	Total Males.	Cured.	No Change or Advice.	Died.	Operation. Total.	Operation. Cured.	Operation. Died.	Taxis. Total.	Taxis. Cured.	Taxis. Died.	Total Females.	Cured.	No Change or Advice.	Died.	Operation. Total.	Operation. Cured.	Operation. Died.	Taxis. Total.	Taxis. Cured.	Taxis. Died.
Inguinal,...	9	9	4	3	2	3	1	2	3	3											
Femoral,...	7	1	1	..	..	..	..	..	1	1	..	6	4	..	2	3	1	2	3	3	
Ventral,....	2	1	..	1	..	..	..	..	..	..	..	1	1								
	18	11	5	4	2	3	1	2	4	4		7	5		2	3	1	2	3	3	

The female marked as having been cured after the operation for femoral hernia, had artificial anus subsequent to the operation, but this was completely closed at the time of her dismissal. Between a fortnight and three weeks after her dismissal, she was admitted with a severe attack of peritonitis, which rapidly proved fatal. The friends would not permit the body to be examined.

TABLE XVI.

›wing the number of the amputations on the extremities performed upon patients admitted between the 1st July 1839 and the 1st July 1841, and the relative number of rimary and secondary and other amputations among those of the thigh, leg, shoulder ›int, arm, and forearm.

	Total. Males and Females.	Total. Cured.	Total. Died.	Total. Resd. in Hosp. Days.	Males. Total Males.	Males. Cured.	Males. Died.	Females. Total Females.	Females. Cured.	Females. Died.	Primary. Total Primary.	Primary. Cured.	Primary. Died.	Primary. Resd. in Hosp. Days.	Secondary and other. Total Secondary.	Secondary and other. Cured.	Secondary and other. Died.	Secondary and other. Resd. in Hosp. Days.
ıigh,.....	25	14	11	53	17	9	8	8	5	3	7	..	7	6½	18	14	4	72
g,.....	12	8	4	59	8	4	4	4	4	..	2	..	2	10½	10	8	2	67
ıot, (different parts of,).....	8	8	..	106	6	6	..	2	2									
›oulder Joint,...	3	1	2	55	2	1	1	1	..	1	1	1	..	48	2		2	58
rm,.....	1	1	..	40	1	1	..	..	..	..	..	..	..	..	1	1		40
›rearm,.....	2	1	1	27	1	..	1	1	1	..	..	..	..	..	2	1	1	27
and, (different parts of,)	18	17	1	31	15	14	1	3	3									
	69	50	19	52	50	35	15	19	15	4	10	1	9		33	24	9	

The average residence of the above patients in the hospital was not calculated from the number of days they remained under treatment after amputation, but includes the whole time they sojourned in the hospital.

Many of the cases placed under the head of primary amputations had not only severe injury of the limb amputated, but also of other parts of the body.

All the amputations, whether from accident or *chronic disease*, not included in the primary, are here termed secondary.

Of the seven primary amputations of the thigh, four were males and three females, and one died within twenty-four hours after admission.

SECONDARY AND OTHER AMPUTATIONS OF THIGH.

Cured.		Died.	
Nature of Disease.		*Nature of Disease.*	*Cause of Death.*
Diseased Knee Joint,	10	Necrosis of Tibia, 1	Pneumonia and Colonitis.
Necrosis of Tibia,	1	Disease of Knee Joint, 1	Pneumonia.
Sloughing Ulceration of Stump, (leg amputated four weeks before, in the country,)	1	Cerebriform Tumour of lower part of Thigh, 1	Not returned.
Simple Fracture of Thigh which had become Compound,	1	Hemorrhage from Popliteal Aneurism, 1	Phlebitis.
Compound Fracture of Patella,	1		
	14	4	

Both the patients who died after primary amputation of the leg were males.

SECONDARY AND OTHER AMPUTATIONS OF LEG.

Cured.		Died.	
Nature of Disease.			
Diseased Ankle Joint,	3	Gangrene of both Feet from exposure to cold, (amputation of both legs,)	1
Caries of Tarsal Bones,	3	Compound Fracture of Leg with Simple Fracture of opposite Thigh,	1
Necrosis of Tibia,	1		
Neuroma on face of a Stump after amputation,	1		
	8		2

The patients who died after amputation of forearm, had the amputation performed in consequence of diffuse inflammation of cellular tissue. The two patients who died after amputation at the shoulder joint, were admitted with severe burn of the upper extremity; the patient who survived was admitted with severe laceration of the arm by machinery. One patient included under amputation of foot, had Chopart's operation performed on both feet at the same time. Another had Lisfranc's amputation performed on one foot. The others were amputation of one or more toes. The patient who died after amputation of part of a hand, had a finger removed for injury of the hand, and shortly afterwards took tetanus.

SOME REMARKS ON TABLE I.

Of the three patients who are stated to have died of ulcers, one died exhausted from extensive sinuses on the back; in another the *immediate* cause of death was pneumonia and Bright's disease; the third took violent hæmatemesis, probably connected with organic disease of the stomach, but this could not be ascertained, as the friends refused permission to examine the body.

Five cases placed under the head of abscess, might, perhaps, have been better arranged among the inflammations of the bursæ, as the *pus* was within the *bursa over the patella.*

Other two cases of abscess were lumbar abscesses, and might, perhaps, have been more appropriately placed under the head of *caries.*

Of the cases ranged under the head of caries, seven were of the vertebræ.

TABLE XVII.

Carcinomatous and Cerebriform Disease admitted between the 1st July 1839, and 1st July 1841.

	Total.	Male.	Female.	Operations.		Cured.		Relieved.		Desire or Advice.		No Change.		Died.		Residence in Hospital.	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Mamma,	15	..	15	..	7	..	7	..	..	..	6	..	2	..	..	..	26½
Lip,	14	13	1	9	..	9	..	..	..	2	1	2	..	..	..	12	5
Penis,	4	4	..	2	..	1	..	..	..	1	..	1	..	1	..	22	
Eyeball and Orbit,	2	1	1	1	1	1	1	..	..	..	..	..	..	..	..	37	19
Groin,	3	2	1	..	..	..	..	..	..	1	1	1	..	..	..	30	13
Rectum,	4	2	2	..	..	..	..	..	..	2	2	..	..	..	..	10	20
Glands of Axilla,	2	..	2	..	1	..	1	..	..	..	1	..	..	..	..	..	14
Wrist,	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	22
Leg,	1	..	1	..	..	..	..	..	..	..	1						
Tonsil,	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	2	
Medullary Tumours of Bones,	5	3	2	1	..	..	..	..	..	..	2	1	1	1	..	11½	93
Ditto of Abdomen,	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	10	
— Chest,	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	15	
Angle of Jaw, Head, and Face,	8	5	3	3	..	2	..	1	..	1	1	1	2	..	..	39	13
Seat not stated,	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1		
Total,	63	33	30	16	9	13	9	1	..	9	15	6	5	4	1		

One of the Females affected with Medullary Tumour of the lower part of the Femur, and dismissed with advice, was re-admitted after 1st July 1841, had the Thigh amputated, and left the Infirmary cured.

In one of the Cases of Cancer of the Penis, the Patient was actually admitted for Retention of Urine; and as, from the great extent of the disease, it was found impossible to pass the catheter, the bladder was punctured above the pubis. He was, several days afterwards, dismissed, and is marked in the above table under the head "No Change," the origo mali not being removed.

The two Female Patients placed under the head of Cancer of the Rectum, were not two different individuals, but the same Patient admitted at two different periods.

Of the twenty-five Patients operated on, two died from the effects of the operation; one after Amputation of the Thigh for Medullary Tumour of lower part of Femur; the other after Amputation of the Penis.

The following cases are included among the Organic Affections of the Uterus, Liver, Stomach, &c.:—

Cancer of Uterus,	2	White Tubercle of Liver,	2
Cerebriform Disease of Uterus,	1	Cerebriform Disease of Brain,	1
Cancer of Labia and Vulva,	2	Ditto ditto Eye,	1
Cerebriform Disease of Stomach,	2	Ditto ditto Œsophagus,	1
Scirrhus of Stomach,	4	Ditto ditto Bladder	1
Cerebriform Disease of Liver,	2		

TABLE XVIII.

Non-Malignant Tumours admitted between 1st July 1839, and 1st July 1841.

	No.	Excised.	Not Excised.	Cured.	Died.	Other Results.
Of the Scalp,.....	1	1	..	1		
Angle of Jaw,.....	2	2	..	2		
Back, Shoulder, Sacrum, & Hip,	7	5	2	5	..	2
Neck,.....	7	3	4	5	..	2*
Eyelid,.....	1	1	..	1		
Antrum,.....	1	..	1	..	..	1
Lower Jaw,.....	1	1	..	1†		
Face,.....	1	1	..	1		
Orbit,.....	1	1	..	..	1‡	
Polypus of Throat,	1	1	..	1		
	23	16	7	17	1	5

* One of those cured was a serous Cyst, and was punctured; another serous Cyst, also in the Neck, was cured by the application of potassa fusa.

† Disarticulation and Excision of one side of Lower Jaw. The disease was a Fibrous Tumour in the ascending ramus.

‡ Eyeball extirpated, and died of Meningitis.

Of the sixteen Patients operated on, one died.

TABLE XIX.

List of Surgical Operations performed between the 1st July 1839, and 1st July 1841.

	Number of Patients.
Amputation of Portions of Extremities,	69
Excision of various parts, as given in the above two last tables,	40
— Polypus from Os Tincæ,	1
— Tumour from Vulva,	1
— Os Tincæ,	1
— Cancerous portion of Vulva,	1
— Enlarged portion of Ulnar Nerve,	1
— Elbow Joint,	1
— Shoulder ditto,	1
— Portion of Lower Jaw, for Ostea Sarcoma,*	1
— Loose Cartilages from Knee Joint,	5
— Testicle,	2
Lithotomy,	4
Lithotrity,	3
Trephine,	5
Ligature of Femoral Artery,†	5
— Humoral Artery,	2
Ligature of Ulnar,	1
Hernia,	6
Removal of a portion of Humerus for Necrosis,	3
— — Tibia,	2
— — Femur,	2
— — Ulna,	2
— — Superior Maxilla,	1
— — Calcaneum for Caries,	2
Harelip,	8
Restoration of Nose,	1
— Part of Lower Lip,	1
Division of Tendo Achillis for Club Foot,	12
— Tendon of Biceps Humeris	1
— Hamstring Muscles,	2
— Palmar Aponeurosis,	1
Fistula Lachrymalis,	3
Tracheotomy,	6

No correct returns were sent in of the number of Operations for Strabismus, Cataract, Paracentesis, Phymosis, Fistula in Ano, &c. &c.

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* *Vide* Table XVIII. for another case of Excision of a portion of the Lower Jaw.

† The Femoral Artery was tied three times for Popliteal Aneurism, and twice for Hemorrhage occurring from sloughing after fracture of the Leg. In the two cases in which the Humeral Artery was tied, it had been wounded before admission.

TABLE XX.

REGISTER of the WEATHER kept by Mr Adie, at Canaan Cottage, one Mile and a-Half to the South of Edinburgh.

1839.						1840.						1841.					
	Thermometer.		Barometer.		Rain.		Thermometer.		Barometer.		Rain.		Thermometer.		Barometer.		Rain.
Months.	Min.	Max.	Morn.	Even.		Months.	Min.	Max.	Morn.	Even.		Months.	Min.	Max.	Morn.	Even.	
January,	29.03	41.97	29.107	29.094	1.76	January,	33.37	45.43	29.24	29.24	3.72	January,	27.76	39.13	29.51	29.48	1.23
February,	31.15	44.75	29.694	29.663	1.45	February,	31.66	43.23	29.60	29.58	1.58	February,	33.14	42.60	29.62	29.59	1.64
March,	31.94	44.55	29.519	29.505	1.47	March,	33.16	49.13	30.05	30.03	.43	March,	38.87	50.09	29.49	29.53	.58
April,	35.10	51.90	29.910	29.891	.33	April,	39.16	57.57	29.77	29.79	.19	April,	37.56	53.13	29.55	25.57	1.14
May,	38.42	59.84	29.438	29.798	.47	May,	40.87	55.52	29.64	29.65	3.97	May	42.71	61.35	29.63	29.62	1.14
June,	46.83	64.47	29.626	29.663	3.91	June,	46.07	64.17	29.56	29.60	2.51	June,	45.17	62.57	29.71	29.71	1.55
July,	49.52	67.74	29.547	29.557	3.51	July,	47.81	64.09	29.57	29.52	3.46	July,	48.58	64.19	29.55	29.56	3.87
August,	44.90	65.00	29.735	29.692	1.77	August,	50.55	67.71	29.65	29.60	1.99	August,	49.16	65.35	29.56	29.57	4.69
September,	44.90	61.59	29.280	29.257	3.09	September,	48.57	59.23	29.41	29.43	2.39	September,	47.67	61.71	29.49	29.49	2.63
October,	40.71	54.68	29.777	29.736	2.38	October,	39.03	53.03	29.71	29.43	2.01						
November,	30.37	48.10	29.404	29.421	1.65	November,	35.63	47.73	29.32	29.34	2.33						
December,	34.19	41.97	29.342	29.300	1.66	December,	30.81	41.71	29.92	29.91	.68						
Mean of the year,	46.73		29.540		23.45 Total.	Mean of the Year,	46.68		29.61		25.26 Total.						

PART FOURTH.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

BRITISH ASSOCIATION.

MEDICAL SECTION.—*June* 23. *First Day.*

PRESIDENT,—E. Holme, M.D. VICE-PRESIDENTS,—J. L. Bardsley, M.D.; C. B. Williams, M.D. SECRETARIES,—Dr Sargent, and Dr Clayton.

[*The proceedings of the Medical Section commenced at* 11 *o'clock on Thursday morning, the* 23*d inst., and, when it is considered that there are nearly* 500 *medical and surgical practitioners in and about Manchester, independently of those who assemble from different parts of the empire on such an occasion, it appeared somewhat surprising that so few were to be seen at this meeting, there being never more than* 25 *during the first day's proceedings.*]

1. *Auscultation and Percussion.*—Dr C. B. Williams was then called upon for his paper on this subject. It had been observed, (said Dr Williams) by Laënnec, that the best stethoscopes appeared to be contrary to the general principles of acoustics, or, in other words, that those were not the best, which were made on strictly acoustic principles; but Dr W. contended, that the laws of sonorous bodies were also those of the stethoscope. The paper embraced a lengthy and able description of the many sorts used, which it is unnecessary to enter into; the following remarks, however, are worthy of particular notice. Dr W. said, whatever form the instrument assumed, it should present a large surface to the vibrations of the column of air, which it was necessary should be an enclosed one. Dr W. then entered at considerable length on the question as to whether the vibrations were conveyed to the ear by the solid substance of which the instrument was composed, or the column of air in the hollow of the tube, and inclined towards the latter, but considered it imperatively requisite that it should be enclosed. He stated that Dr Cowan (of Reading) was of opinion, that the column of air was not the conductor of the various sounds to the ear, and that if the tube was stopped with putty, or other dense matter, the properties of the instrument were not materially affected. Dr Williams considered this view not wholly correct, and that from experiments he had instituted, he found that stopping the aural end with any dense mass depreciated its powers, but not so with the pectoral end. This species of plugging affected the flexible stethoscopes most, which led him (Dr W.) to suppose the enclosed column of air, and not the solid medium, to be the conveyer of sounds. Sound was conveyed very correctly without the ends of the instrument being in actual contact at either end. The clothing of the patient might be allowed at the pectoral end, and the aural extremity might be kept at a moderate distance from the ear of the operator, without any disadvantage. Large holes made in the sides of the instrument did not materially injure its testing powers, which, if the solid medium was the sole conveyer of the sounds, it certainly would. Entirely solid stethoscopes were not good instruments, and this remark applied to instruments covered up solid at the pectoral end; but with this latter circumstance a singular fact was displayed, *i. e.* if the solid pectoral end be used as the aural end, it became a very correct instrument. The trumpet or bugle-mouthed stethoscope was, in his

(Dr W.'s) opinion, the best. Sometimes it was necessary to contract the opening at the pectoral end, to ascertain the effect on very limited portions of structure, and in very thin patients it was requisite to clothe the end with a coating of India rubber, for closer approximation to the parts. The author then proceeded to his remarks on percussion, entering into the variety of hammers and pleximeters. He (Dr W.) had found, generally speaking, the deepest sounds indicative of healthy structure, and the less sonorous and indistinct ones, to be of diseased structures. In percussion, it was necessary to avoid light strokes, as they merely produced a confused sound of the superficial textures, or of the instrument itself; but a well-directed, powerful stroke emitted sounds from within. Dr W. preferred a hammer made of lead, about the size of a shilling, but thicker, and well clothed with wash-leather and velvet: as to the pleximeter, he thought one shaped like the finger bent at a moderate angle, made of whalebone, also well clothed with the same materials, the best, as it was more easily applied between the ribs with great nicety. As a general rule, Dr W. stated, if the operator was dissatisfied with the sound over any part, it would be well to try the exactly opposite point behind, where it would often be conclusive.

Dr Charles Clay (of Manchester) observed, that he thought a musical, or, at least, a very correct power of hearing was necessary to form good conclusions with the stethoscope. He had known a case where two expert auscultators had come to diametrically opposite opinions on the same case, experimented on at the same time, and with the same instrument. An examination, *post mortem*, proved the one to be correct; the other not. On further inquiry, he (Dr Clay) found that the gentleman forming the correct diagnosis had an extremely correct musical ear; the other had not.

Dr Williams thought with Dr Clay, that a musical or correct ear was in some degree necessary, but that it might be possible, with long observation, to acquire all that was required by the stethoscope, without any very extraordinary correctness of hearing as to music.

Mr Turner (of Manchester) after long experience, thought some advantage would be gained by a convoluted stethoscope.

Dr Williams said, to lengthen the instrument (as convolution would do), would be objectionable, inasmuch as it would produce a confusion of sound by repeated reflections. One had been used five or six feet long; the only advantage, however, he knew attending it, was that of keeping at a respectable distance from a patient with a contagious disease.

June 24. *Second Day.*

[*The attendance was more numerous, about* 50 *being present.*]

2. *On the Influence of the Coronary Circulation on the Heart. By Mr Erichson.*—Mr E. contended that ossification, or obstruction in the coronary circulation, was often the cause of sudden death. In illustration, a number of experiments on dogs, rabbits, &c., were related, in which the coronary arteries were tied, and artificial respiration kept up, when it was found the heart's action rapidly declined, and ceased altogether, in a very few minutes, after the ligature. The detail of the experiments was highly interesting, and proved pretty clearly that an arrest of the coronary circulation was, perhaps, much oftener the cause of sudden death than was generally supposed.

Dr C. B. Williams thought the subject an important one, and worthy of further investigation.

3. *On the Effects of Respiration on the Circulation, and more particularly in respect to the venous department, prevailing congestion in the liver, &c. By Mr Shaw (of London.)*—Mr Shaw's views were more on the mechanical principle than otherwise, and not sufficiently physiological or pathological for general acceptation.

Mr Turner (of Manchester) agreed with Mr Shaw, that respiration was a powerful agent, but not the only one, by any means, in promoting circulation.

Drs Harrison and C. B. Williams (of London) argued at considerable length as to the nature of Dr Reid's experiments, the former contending for their general correctness, the latter considering them inconclusive. Dr Williams stated, in confirmation of Mr Shaw's views, that all weak pulsations at the wrist were those during inspiration, and strong ones those of expiration; that is, where there existed an irregularity of the pulsation at the wrist, which often happened, even when the heart's action was not irregular.

4. A short paper was then read by the Secretary (Dr Sargent) from Dr Fowler, respecting a case, some particulars of which had been reported to the Medical Section when at Plymouth. It was one of *deprivation of sensation of sight, hearing, and speech;* the subject of which, however, possessed considerable intelligence through the medium of touch alone.

5. *On the Therapeutic Application of Air-tight Textures to the Surface, in the Cure of Diseases. By Dr C. B. Williams.*—What Dr W. had found most efficient was oiled silk, preventing the escape of perspiration on the one part, and protecting the surface from atmospheric influence on the other. He had found oiled silk very efficacious in removing various cutaneous diseases, and thought it worthy of attention. Another subject he wished to mention, was the efficiency of air-tight bags or cushions partially inflated, for accomplishing pressure in all cases where pressure was desirable, as being most easy of application, and the pressure obtained most equal.

June 25. *Third Day.*

[*The attendance to-day was about the same as yesterday.*]

6. Dr J. L. Bardsley exhibited a drawing of a child born in 1837, and known to be living three years after, with four arms and four legs.

7. Mr Peel Catlow then proceeded with his paper; the object of which was to prove that equal importance should be attached to the season and month of birth, in considering the value of life as a question of insurance, &c. Mr Catlow had drawn his conclusions from a register of 10,700 deaths, compared with the period of their births from one cemetery, and about 5,000 deaths and births recorded on tombstones, in his searchings in grave-yards. It is needless to observe that the paper was a most elaborate one, illustrated with a vast number of tabular arrangements, to bear out the various views of the author. Like other statistical papers, the detail appeared tedious to the meeting, notwithstanding the conclusions arrived at were startling, and of an entirely new character in vital statistics. It would be impossible to do justice, in a brief report, to the paper; all that falls within our power is, to give a few of the many points made out.

Mr Catlow observed, that all his tables, and the numbers above alluded to, had reference to children under two years of age. He considered the value of life in the insurance question would be far better understood by taking in the circumstances of birth, as to time and season, assisted with the time and season of birth of the parents, which were of equal value, as the circumstances of death so generally inquired after. Passing over the rate of births and deaths in various years, which he (Mr Catlow) fully illustrated, the tables exhibited two and one-tenth per cent. less born in the winter quarter than the general tables of other authors allowed; that the spring births were two and four-tenths per cent. less; the autumn births two and seven-tenths less; and in summer, two and five-tenths *per cent. more than generally quoted.* He also found, that of spring and summer births, a great number never arrive at two years of age; but of autumn and winter births, many more, in proportion, arrived at two years of age. The above tables were constructed from the comparison of eight years, and not from any isolated year or locality. That children born in a temperature increasing are less likely to live than those born in a declining temperature. That the season of birth predicated the season of death, and this to a much greater extent than could possibly be believed. The June and July births furnish the greatest quota of mortality, and that this point is contradictory to most authors. That January, on the contrary, furnished the least quota of mortality by its births. Thus the tendency to death in certain months, according to the month of birth, is as well made out as any other point of statistical information. There appears also to be a strong analogy between the time and season of birth of parents when compared with each other, and with their offspring. Mr Catlow presumed it quite within the range of possibility to lengthen the probability of life in children by combining the favourable positions as to time and season of birth in both parents in connubial engagements; and he could not refrain from expressing his conviction, that some of the ancient astrologers had a slight idea of this matter, which assisted them materially in their predictions. One thing certain is, that, as far as figures went, they were positive facts, and countenance the views here given. Mr Catlow mentioned many other circumstances equally novel, but which are more likely to mislead than instruct, if given without accompanying tables.

8. Mr Roberton was then called upon for his paper *On the period of Puberty of Negro Women.* In this very excellent paper Mr Roberton showed very clearly that the commonly-received opinion of the females of hot climates menstruating so much earlier than in our own, or colder climates, was an erroneous one, and that it was far more a matter of constitution than of age, climate, or season. Mr R. read over some very interesting statistical information from the islands of Jamaica, &c., in support of his views, which certainly were very conclusive, as far as they went. There were, however, objections: first, the number of cases was too few for general inferences to be drawn, and the information not wholly obtained from medical sources; nevertheless, it appeared that negro females did not commonly menstruate as early as had been supposed, and that very many were quite as late as in our own climate. Lastly, Mr Roberton endeavoured to show by British history, as well as European history generally, that very early menstruation was borne out by the early marriages recorded equally early in Europe as the majority of cases in hotter climates. Vide MONTHLY JOURNAL *for this month*, p. 712.

Dr C. Clay thought Mr Roberton, perhaps, did not allow enough for the varieties of statement in various historians in this matter, which in many instances, were not only contradictory but quite apparent; that they often confused betrothals with the consummation of marriage, whilst it was well known the consummation did not take place for many years after the betrothal. Mr Roberton did not place much confidence in the statements of historians on medico-legal points, knowing they were liable to error; he merely mentioned them as corroborative as far as they were entitled to credit.

June 27. *Fourth Day.*

[*At the commencement of this day's proceedings the audience was very thin.*]

9. A very lengthy communication from Dr Laycock, on *Vital Periodicity*, was read by the Secretary (Dr Sargent), in which a vast number of facts were related, establishing periodicity not only in diseases, but in sound health, and not only in man, but in the lower orders of animals. Such facts had been noticed very particularly by the ancient writers on medicine, Hippocrates, Celsus, &c., which led to the establishment of critical days in the treatment of various diseases, often rendering their prognostications very certain; indeed, Dr Laycock stated, that in many instances certain periodic changes took place in health as well as disease, establishing the same law, that he (Dr L.) felt little doubt that the time of birth had reference to the time of death. The views of this paper coincided very much with what had been promulgated by Mr P. Catlow the day before, and tended greatly to establish Mr C.'s principles.

10. Dr Clay was then called upon for his communication respecting the *Treatment, &c. of Diabetes*, in which the author endeavoured to prove, in respect to the various plans of treatment adopted, that the tonic and astringent had been the most successful, if statistical statements were to be relied upon; that the views entertained by the older writers as to its being unquestionably a disease of debility, were correct, as statistics proved.

June 28. *Fifth Day.*

11. *On Lithotomy and Lithotrity, by Mr Wilson.*—Mr W. entered largely on the statistical success of the two operations, jointly and separately; and in speaking of the value of the operations comparatively, he (Mr W.) preferred the old operation in children, but fully approved of lithotrity in the adult, if not pushed too near old age. He thought the better success of modern operators entirely owing to their cautiousness in the selection of their cases.

12. Professor Owen then came forward and referred to a memoir "On Fibre," by Dr Martin Barry, just published in the Transactions of the Royal Society; and communicated the principal results of the researches therein detailed.

13. Dr Carson then read his paper on the *Uses of the Muscular Fibres of the Bronchial Tubes.*

14. Dr Carson introduced a case to the meeting, of *Paralysis in the Serratus Magnus.* The man exhibited to the meeting showed an entire paralytic rest, and partial absorption of the serratus magnus, with a tremulous motion of the scapula, with rigility of the supra and infra spinali scapulary muscles, and an evident enlargement of the left deltoid.

15. Dr Richardson then briefly related a *case of Asphyxia*, in which the recovery took place after a very considerable lapse of time.

16. Dr Clay then read his paper, entitled, *The Evils arising from the Use of Common Pessaries.*

In Section B. (*Chemistry and Mineralogy.*)

1. Dr Playfair, on Thursday, June 30, read the following *Abstract of Professor Liebig's Report on Organic Chemistry, applied to Physiology and Pathology.*:—Professor Liebig had been requested, some few years ago, to apply himself to the consideration of vegetable and animal physiology. The Professor's first Report had been read at the meeting of the Association at Glasgow, in 1840. The second he was about to bring before their notice. And in a third, the Professor intended to apply the principles of organic chemistry to diet and dietetics; and under this head would be comprised the nutritiveness of particular vegetables in the fattening of cattle. The first part of Professor Liebig's Report consisted of the examination of the processes employed in the nutrition and reproduction of the various parts of the animal economy. In vegetables, as well as in animals, we recognise the existence of a force in a state of rest. It is the primary cause of growth or increase in the mass of the body in which it resides. By the action of external influences, such as by the pressure of air and moisture, its condition of static equilibrium is disturbed; and entering into a state of motion or activity, it occupies itself in the production of forms. This force has received the appellation of *vital force*, or *vitality*. Vitality, though residing equally in the animal and vegetable kingdoms, produces its effects by widely different instruments. Plants subsist entirely upon manures belonging to inorganic nature. Atmospheric air, the source whence they derive their nutriment, is considered to be a mineral by the most distinguished mineralogists. All substances, before they can form food for plants, must be resolved into inorganic matter. But animals, on the other hand, require highly organized atoms for nutriment. They can only subsist upon parts of an organism. They possess within them a vegetative life, as plants do, by means of which they increase in size, without consciousness on their part; but they are distinguished from vegetables, by their faculties of locomotion and sensation—faculties acting through a nervous apparatus. The true vegetable life of animals is in no way dependent upon this apparatus, for it proceeds when the means of voluntary motion and sensation are destroyed; and the most energetic volition is incapable of exerting any influence on the contractions of the heart, on the motion of the intestines, or on the processes of secretion. All parts of the animal body are produced from the fluid circulating within its organism, by virtue of vitality, which resides in every organ. A destruction of the animal body is constantly proceeding. Every motion, every manifestation of force, is the result of the transformation of the structure, or of its substance. Every conception, every mental affection, is followed by changes in the chemical nature of the secreted fluids. Every thought, every sensation, is accompanied by a change in the composition of the substance of the brain. It is to supply the waste thus produced that food is necessary. Food is either applied in the increase of the mass of a structure, (that is, in nutrition,) or it is applied in the replacement of a structure wasted, (that is, in reproduction.) The primary condition for the existence of life is the reception and assimilation of food. But there is another condition equally important—the continual absorption of oxygen from the atmosphere. All vital activity results from the mutual action of the oxygen of the atmosphere and the elements of the food. All changes in matter proceeding in the body are essentially chemical, although they are not unfrequently increased or diminished in intensity by the vital force. The influence of poisons and remedial agents on the animal economy proves, that the chemical combinations and decompositions proceeding therein, and which manifest themselves in the phenomena of vitality, may be influenced by bodies having a well-defined chemical action. Vitality is the ruling agent by which the chemical powers are made to subserve its purposes; but the acting forces are chemical. It is from this view, and another, that we ought to view vitality. According to Lavoisier, an adult man takes into his system, every year, 837 lb. of oxygen, and yet he does not increase in weight. What, then, becomes of the enormous quantity of oxygen introduced in the course of the year into the human system? The carbon and

hydrogen of certain parts of the body have entered into combination with the oxygen introduced through the lungs and through the skin, and have been given out in the form of carbonic acid, and the vapour of water. At every moment, with every expiration, parts of the body are thus removed, and are emitted into the atmosphere. No part of the oxygen inspired is again expired as such. Now, it is found that an adult inspires 32½ oz. of oxygen daily. This will convert the carbon of 24 lb. of blood into carbonic acid. He must, therefore, take as much nutriment as will supply this daily loss; and, in fact, it is found that he does so; for the average amount of carbon in the daily food of an adult man, taking moderate exercise, is 14 oz., which require 37 oz. of oxygen for their conversion into carbonic acid. But it is obvious, as the inspired oxygen can be removed only by its conversion into carbonic acid and water, that the amount of food necessary for the support of the animal body must be in direct ratio to the quantity of oxygen taken into the system. Thus, a child, in whom the organs of respiration are naturally in a state of great activity, requires food more frequently, and in greater proportion to the bulk than an adult, and is also less patient of hunger. A bird deprived of food dies on the third day; whilst a serpent, which inspires but a mere trace of oxygen, can live without food for three months. The capacity of the chest in an animal, is a constant quantity. We therefore inspire the same *volume* of air, whether at the pole or the equator. But the weight of the air, and consequently of the oxygen, varies with the temperature. Thus, an adult man takes into the system daily 46,000 cubic inches of oxygen, which if the temperature be 77 deg., weigh 32½ oz.; but, when the temperature sinks down to the freezing point (32 deg.) it will weigh 35 oz. Thus, an adult in our climate in winter may inhale 35 oz. of oxygen; in Sicily he would inspire only 28½ oz.; and if in Sweden, 36 oz. Hence, we inspire more carbon in cold weather, when the barometer is high, than we do in warm weather; and we must consume more or less carbon in our food in the same proportion. In our own climate, the difference between summer and winter, in the carbon expired, and therefore necessary for food, is as much as an eighth. Even when we consume equal weights of food, an infinitely wise Creator has so adjusted it as to meet the exigencies of climate. Thus, the fruit on which the inhabitants of the south delight to feed, contains only 12 per cent. of carbon, whilst the bacon and train oil enjoyed by the inhabitants of the arctic regions, contain from 66 to 80 per cent. of the same element. Now the mutual action between the elements of food and the oxygen of the air, *is the source of animal heat.* All living creatures, whose existence depends on the absorption of oxygen, possess within themselves a source of heat, independent of the medium in which they exist. This heat, in Prof. Liebig's opinion, is wholly due to the combustion of the carbon and hydrogen contained in the food which they consume. Animal heat exists only in those parts of the body through which arterial blood (and with it oxygen in solution) circulates. The carbon and hydrogen of food, in being converted by oxygen into carbonic acid and water, must give out as much heat as if they were burned in the open air. The only difference is, that this heat is spread over unequal spaces of time; but the actual amount is always the same. The temperature of the human body is the same in the torrid as in the frigid zone. But, as the body may be considered in the light of a heated vessel, which cools with an accelerated rapidity the colder the surrounding medium, it is obvious that the fuel necessary to retain its heat must vary in different climates. Thus, less heat is necessary in Palermo, where the temperature of the air is that of the human body, than in the polar regions, where it is about 90° lower. In the animal body, the food is the fuel; and, by a proper supply of oxygen, we obtain the food given out during its combustion in winter. When we take exercise in a cold atmosphere, we respire a greater amount of oxygen, which implies a more abundant supply of carbon in the food: and, by taking this food, we form a most efficient protection against the cold. A starving man is soon frozen to death; and every one knows that the animals of prey of the arctic regions are far more voracious than those of the torrid zone. Our clothing is merely an equivalent for food; and the more warmly we are clothed, the less food we require. Were we to go destitute of clothes, like certain savage tribes,—or if, in hunting or fishing, we were exposed to the same degree of cold as the Samoyedes,—we could with ease consume 10 lb. of flesh, and, perhaps, a dozen tallow candles into the bargain; as warmly clad travellers have related, with astonishment, of those people. Then could we take the same quantity of brandy or blubber of fish without bad effects, and learn

to appreciate the delicacy of train oil. We thus perceive the reason of the apparently anomalous habits of different nations. The maccaroni of the Italian, and the train oil of the Greenlander and the Russian, are not adventitious freaks of taste, but necessary articles fitted to administer to their comfort in the climates in which they have been born. The colder the region, the more combustible must the food be. The Englishman in Jamaica perceives with regret the disappearance of his appetite, which, in England, had been a constant recurring source of enjoyment. By the use of aromatics he creates an artificial appetite, and eats as much food as he did at home. But he thus unfits himself for the climate in which he is placed; for sufficient oxygen does not enter his system to combine with the carbon consumed; and the heat of the climate prevents him taking exercise to increase the number of his respirations. The carbon of the food is therefore forced into other channels, and disease results. England, on the other hand, sends her dyspeptic patients to southern climates. In our own land their impaired digestive organs are unable to fit the food for that state in which it best unites with the oxygen of the air, which therefore acts on the organs of respiration themselves, thus producing pulmonary complaints. But when they are removed to warmer climates, they absorb less oxygen, and take less food; and the diseased organs of digestion have sufficient power to place the diminished amount of food in equilibrium with the respired oxygen. Just as we would expect from these views, in our own climate hepatic diseases, or diseases arising from excess of carbon, are more prevalent in summer, and in winter pulmonic diseases, or those arising from excess of oxygen. The Professor then went on to disprove the notion, that animal heat is due to nervous influence, and not to combustion,—an error which had its origin in supposing that the combustion proceeds in the blood itself. He also showed, that animal heat must not be ascribed to the contraction of the muscles. The Professor proceeds to prove, that the heat evolved by the combustion of carbon in the body is sufficient to account for the phenomena of animal heat. He shows that the 14 ounces of carbon which are daily converted into carbonic acid, in an adult, disengage no less than 197·477° of heat; a quantity which would convert 24lb. of water, at the temperature of the body, into vapour. And if we assume that the quantity of water vaporized through the skin and lungs amounts to 3lb., then we have still 146·380° of heat to sustain the temperature of the body. And when we take into calculation the heat evolved by the hydrogen of the food, and the small specific heat possessed by the organs generally, no doubt could be entertained that the heat evolved in the process of combustion, to which the food is subjected in the body, is amply sufficient to explain the constant temperature of the body. From what has preceded, it is obvious that the amount of carbon consumed in food ought to depend on the climate, density of air, and occupation of the individual. A man will require less carbon when pursuing a sedentary occupation, than when he is engaged in active exercise. Professor Liebig, having thus discussed the source of animal heat, proceeds next to consider what are the ingredients in the food, which may properly be considered to be nutritious. Physiologists conceive that the various organs in the body have originally been formed from blood. If this be admitted, it is obvious that those substances only can be considered as nutritious which are susceptible of being transformed into blood. The Professor then entered upon an examination of the composition of blood, and of the identity in chemical constitution of fibrine and albumen. The nutritive process is simplest in the case of the carnivora. This class of animals lives on the blood and flesh of the graminivora, whose blood and flesh are identical with their own. In a chemical sense, therefore, a carnivorous animal, in taking food, feeds upon itself, for the nutriment is identical in composition with its own tissues. The Professor then inquired from what constituents of vegetables the blood of the graminivorous animals is produced. The nitrogenized compounds of vegetables forming the food of graminivorous animals are called vegetable fibrine, vegetable albumen, and vegetable caseine. Now, analysis has led to the interesting result, that they are exactly of the same composition in 100 parts; and, what is still more extraordinary, they are absolutely identical with the chief constituents of the blood—animal fibrine and animal albumen. By identity, be it remarked, we do not imply similarity, but absolute identity, even as far as their inorganic constituents are concerned. These considerations showed the beautiful simplicity of nutrition. In point of fact, vegetables produce, in their organism, the blood of all animals. Animal and vegetable life are therefore most closely connected. The Professor has

still to account for the use of the substances in food which are absolutely destitute of nitrogen; but which we know are absolutely necessary to animal life. In all these we find a great excess of carbon, and but very little oxygen. By a train of admirable reasoning, the Professor arrives at the interesting conclusion, that they are solely exhausted in the production of animal heat, being converted by the oxygen of the air into carbonic acid and water. This portion of the report contained an ingenious and important view of the use of bile in the animal economy, the truth of which quantative physiology dare not deny. When exercise is denied to graminivorous and omnivorous animals, this is tantamount to a deficient supply of oxygen. The carbon of the food not meeting with sufficient oxygen to consume it, it passes into the compounds containing a large excess of carbon and deficiency of oxygen; or, in other words, fat is produced. Liebig concludes, that fat is altogether an abnormal and unnatural production, arising from the adaptation of nature to circumstances, and not of circumstances to nature,—altogether arising from a disproportion of carbon in the food to that of the oxygen respired by the lungs, or absorbed by the skin. Wild animals in a state of nature do not contain fat. The Bedouin, or Arab of the Desert, who shows with pride his lean, muscular, sinewy limbs, is altogether free from fat. And the Professor points out the diseases arising from this cause. From all that has transpired, we may sum up the nutritious elements of food as follows. The ingredients adapted for the formation of the blood, and which the Professor calls the plastic elements of nutrition, are as follows:—Vegetable fibrine, vegetable albumen, vegetable caseine, animal flesh, animal blood. The other ingredients of food being fitted to retain the temperature of the body, he calls the elements of respiration. They are—fat, starch, gum, cane sugar, grape sugar, sugar of milk, pectine, bassorine, beer, wine, spirits. These are Professor Liebig's general principles of nutrition. The second part of the work consists of details, in which he examines the chemical processes engaged in the production of bile, of urea, uric acid and its compounds, as well as of cerebral and nervous substance. The conclusions to which he has arrived on the subjects are of such great and startling interest, that Dr Playfair said, he dared not venture to make an abstract of them, without entering into the calculations with which they were accompanied. In the Professor's explanatory remarks on digestion, he ascribes a singular function to saliva. This fluid possesses the remarkable property of enclosing air in the shape of froth, in a far higher degree even than soap suds. This air, by means of the saliva, accompanies the food into the stomach, and there its oxygen enters into combination with the constituents of the food, whilst its nitrogen is again given out through the lungs or skin. The longer digestion continues, the greater is the quantity of saliva, and consequently of air, which enters the stomach. Rumination, in certain graminivorous animals, has plainly for one object a renewed and repeated introduction of oxygen. The Professor further touches upon the use of tea and coffee as an article of food. Recent chemical research has proved, that the active principles of tea and coffee—viz., teine and caffeine,—are absolutely one and the same body, perfectly identical in every respect. The action of tea and coffee on the system must be therefore the same. How is it that the practice of taking them has become necessary to whole nations? Caffeine (teine) is a highly nitrogenized body. Bile, as is well known, contains an essential nitrogenized ingredient—taurine. Now, Professor Liebig considers, that caffeine goes to the production of this taurine; and if an infusion of tea contains only one-tenth of a grain of caffeine, still if it contribute, in point of fact, to the formation of bile, the action even of such a quantity cannot be looked upon as a nullity. Neither can it be denied, that, in case of using an excess of non-azotised food, or deficiency of motion, which is required to cause the change of matter in the tissues, and thus to yield nitrogenized matter of the bile, that in such a condition the state of health may be benefited by the use of tea or coffee, by which may be furnished the nitrogenized product produced in the healthy state of the body, and essential to the production of an important element of respiration. The American Indian, with his present habits of living solely on flesh, could not with any comfort use tea as an article of food; for his tissues waste with such rapidity that, on the contrary, he has to take something to retard this waste. And it is worthy of remark, that he has discovered in tobacco smoke a means of retarding the change of matter in the tissues of his body, and thereby of making hunger more endurable. Nor can he withstand the captivation of brandy, which, acting as an element of respiration, puts a stop to the change of mat-

ter, by performing the function which properly belongs to the products of the metamorphosed tissues. The third part of Professor Liebig's Report treats of the recondite laws of the phenomena of motion. As it is principally of a speculative character, we can pass this over. The Professor concludes his communication by two chapters: one on the theory of disease; the other on the theory of respiration. The whole life of animals consists of a conflict between chemical forces and the vital powers. In the normal state of the body of an adult, both stand in equilibrium. Every mechanical or chemical agency which disturbs the restoration of this equilibrium is a cause of disease. Disease occurs when the resistance offered by the vital force is weaker than the acting cause of disturbance. Death is that condition in which chemical or mechanical powers gain the ascendancy, and all resistance on the part of the vital force ceases. Every abnormal condition of supply or waste may be called disease. It is evident that one and the same cause of disease—that is, of disturbance—will have different effects, according to the period of life. A cause of disease, added to the cause of waste, may in old age annihilate the resistance of the vital powers, or, in other words, occasion death; while, in the adult state, it may produce only a disproportion between supply and waste; and in infancy only an abstract state of health, *i. e.* an equilibrium between supply and waste. Professor Liebig argues, from what has preceded, that a deficiency of resistance in a living part to the cause of waste, is in fact a deficiency of resistance to the action of the oxygen of the atmosphere. The Professor's theory may be compared to a self-regulating steam-engine. The body, in regard to the production of heat and of force, acts just like one of those machines. With the lowering of the external temperature, the respiration becomes deeper and more frequent; oxygen is supplied in greater quantity, and of greater density; the change of matter is increased, and more food must be supplied, if the temperature of the body is to remain unchanged. It has been proved, that iron is not necessary to the colouring matter of the blood, but that it forms an essential constituent of blood globules. These globules, it is well known, take no part in nutrition. Professor Liebig conceives, that the iron is the great means of conveying to the lungs the carbonic acid formed in the system; and he has made a calculation, that the iron contained in the body could actually convey twice as much carbonic acid as is expelled daily from the system.

2. Mr Solly read a paper by Professor Schönbein, "*On the Electrolyzing power of a Simple Voltaic Circle*," showing that voltaic effects may be produced without the solution of a metal, the usual source of voltaic actions, but by nitric and various other acids.

3. Mr William Blyth read a paper "*On the Manufacture of Sulphuric Acid.*"

Section D. (*Zoology and Botany.*)

1. A report was read "*On the present state of the Ichthyology of New Zealand*," by John Richardson, M.D.

2. *Preservation of Animal and Vegetable Substances.*—Mr Babington presented the report of the Committee. A number of simple solutions of different salts had been tried, but, except the sub-carbonate of potash, they all failed to preserve the specimens for any length of time. Substances in solutions of one part of naphtha to seven of water were in good preservation. Creasote is a good preservative, but it stains the specimens brown. Bichloride of mercury preserves well, but hardens specimens too much. Vegetable specimens were well preserved in oxalic acid, concentrated nitric acid, naptha, and creasote.

3. Mr Moore (of Manchester) exhibited specimens of *parasites found on the salmon* in fresh and sea water, differing much in structure. The fresh water parasite left the animal as soon as it arrived at the sea, but the parasite of the salt water remained on the animal a long time after it reached the river. Specimens of the *Argulus foliaceus* were also exhibited, which attacked the carp in the ponds of Manchester; the gold and silver carp, however, were quite free from their presence. He suggested that the presence of the parasites on salmon might be a cause of their migration.

4. Dr Richardson read a description of a new genus of fishes called *Macharium subducens*. The specimen came from Port Essington, in New Holland, and nearly resembled the *Echiodon Drummondii*, lately discovered in the Irish seas, by Mr Thomson.

5. Mr Webb Hall exhibited a specimen of the *nest of a wasp*, found attached to a twig within a deserted bee hive, and about the size of a pigeon's egg.

Section F. (*Statistics.*)

Mr Noble read a paper "*On the influence of the Factory System in the Development of Pulmonary Consumption.*" According to the census of 1831 there were 49,932 families resident in Manchester and Salford; the entire registered deaths in 1839 were 9223, and the cases of consumption 1454, that is, 1 death from consumption out of every 34 families, and 3 from consumption in every 19 deaths from all causes. In agricultural Essex, with a population of 62,403 families, the deaths from consumption in 1839 were 1201, and the total number of deaths 6352; being, in the agricultural district, 4 in every 21, and in the factory district but as 3 in 19. In the district embracing Cambridgeshire, Huntingdonshire, and the southern divisions of Lincolnshire, comprising a population of 67,351 families, the deaths from all causes were 7306, and those from consumption 1308, or nearly 1 death in every 5. Thus the general mortality was lower in the agricultural districts, but the proportion of consumptive cases to deaths was greater. In Liverpool, out of 43,026 families, the deaths for 1839 were 9181, and the deaths from consumption 1742. Thus in Liverpool there are two deaths from consumption out of every 49 families, and in Manchester only two out of every 68. In Birmingham the condition was more favourable, being nearly one death from consumption out of every 36 families; in London the rate is two deaths from consumption out of every 105 families, and the proportion of consumptive cases to deaths from every cause exactly the same as Manchester, or 3 out of 19. With the exception of the metropolis, Manchester has fewer consumptive cases, in proportion to the number of deaths from every cause than any of the districts above mentioned; and hence Mr Noble inferred, that factory labour has no direct tendency to produce consumptive disease. Taking the register of deaths for the three years in the township of Manchester between the ages of fifteen and forty, the following results were obtained: 174 consumptive deaths were of persons employed in factories, 590 of persons registered in various occupations, and 377 without any stated employment. Of the factory operatives, 45 were spinners, 49 winders, 28 piecers, 15 reelers, 11 carders and frame-tenders each, and 10 stated generally to be employed in factories. The general conclusion from these and similar facts was, that factories have no special influence in producing scrofulous disease, or its peculiar manifestation, consumption.

MEDICAL SOCIETY OF LONDON.

(*Continued from p.* 318.)

February 14, 1842.

Rheumatism.—Dr Bennet detailed the case of a young gentleman who, after suffering an attack of acute rheumatism, characterised by the ordinary inflammatory character, for several days, was suddenly seized with delirium, great prostration of strength, small and rapid pulse. The gums became covered with sordes, and the tongue dry and brown. No inflammatory affection of any of the internal organs had been discovered; a mortal termination was anticipated. The patient had engaged much in dissecting shortly before his seizure. General blood-letting had been adopted at the commencement of the attack, and digitalis, calomel, opium, and colchicum had been administered.

Dr Clutterbuck regarded the case as one of acute rheumatism, complicated with inflammation of the brain, which had supervened by metastasis. In acute rheumatism, when the pulse rose to 140 and delirium supervened, it might safely be inferred that inflammation of the brain had occurred. The use of opium in this disease frequently induced inflammation of the brain. It was questionable practice to administer narcotics and colchicum, a medicine whose operation was little understood.

Mr Hancock had seen the case, and was of opinion that the blood-letting had been hurtful, for no delirium or other bad symptom had occurred until the blood had been drawn.

Mr Linnecar remarked, that medicine had little influence in arresting the progress of acute rheumatism. He had not found general bleeding to prove useful, but had seen much benefit derived from local bleeding. In the case of a gentleman, whose pulse was full and bounding, an unfavourable change suddenly occurred, the pulse becoming full and rapid. The treatment, which had been at first of an antiphlogistic character, was changed and bark administered. The brain continued unimpaired, but a recovery took place.

Mr Proctor said, that copious and repeated bleeding afforded relief to the patient, but did not cure the disease. Acute rheumatism never ended fatally unless an important internal organ became implicated. It was not until the violence of the disease had subsided that metastasis supervened. A condition of brain very different from inflammation sometimes supervened in this disease, which was much relieved by opium or Dover's powder.

Dr Clutterbuck considered the *proper* administration of blood-letting the best remedy for acute rheumatism. A copious and early bleeding sometimes cured quickly, and he recommended this treatment in strong subjects. Bleeding, however, was not essentially necessary, for ordinary cases of the disease terminated spontaneously. While Cullen in the north was bleeding, Fordyce, in St Thomas' hospital here, was administering bark in substance, and both physicians met with a measure of success. For the majority of cases, nursing, time, and simple aperient medicine formed the best treatment.

Mr Middleton had successfully treated cases similar to that of Dr Bennet with calomel, opium, and ammonia.

Mr Roberts had derived much benefit in such cases from the exhibition of small doses of ipecacuan wine and tincture of hyoscyamus. Colchicum proved injurious, inducing irritation of bowels and diarrhœa.

Dr Leonard Shenort had never seen death to occur in the early stage of acute rheumatism, but often at a later period, in consequence of disease of the heart.

Dr Chowne remarked, that the condition of the brain in this disease was different from inflammation, and was connected with the general condition of the system.

February 21, 1842.

Rheumatism.—Colchicum.—Dr Bennet said, that the gentleman whose case he had related at last meeting had since died. He mentioned, that within the last few days he had seen a case of acute rheumatism aggravated by colchicum, the medicine having induced diarrhœa and irritation of the bowels.

Mr Proctor said, when colchicum induced irritation of the bowels, it was a poison. Rheumatism was not pure inflammation. The heart became the seat of morbid irritability, which was aggravated by bleeding. This condition of the heart was best treated with Dover's powder.

Dr Bennet did not rely on colchicum for the cure of acute rheumatism, which was less under the influence of this medicine than gout. It was thought by some that colchicum produced characteristic stools.

Mr Clark said, that the stools produced by colchicum were of a watery character. It was the practice of Dr Elliotson, in acute rheumatism, to abstract at first about a pint of blood, and then to administer colchicum.

Mr Clifton had used colchicum extensively in acute rheumatism, but without benefit, until watery and bright-yellow stools were produced. When the stools became watery he reduced the dose. The bright-yellow colour of the stools he referred to an increase in the secretion of the bile, and under this view he had administered colchicum in jaundice, and with successful results. The best preparation of colchicum was that obtained from the seeds.

Mr Dendy had administered colchicum extensively, but with no marked benefit. When it proved useful, it was by acting on the bowels, having no specific operation.

Dr Theophilus Thomson said, that in the majority of cases of gout treated by him with colchicum, benefit resulted, even although no diarrhœa was induced. Disease of the heart was a very frequent result of acute rheumatism. In his dispensary practice of the past year, the number of deaths from this cause was equal to the number of deaths from consumption. Great bleeding tended to induce disease of the heart, and when this organ became implicated, there was an intolerance of colchicum.

Mr Robarts thought that the discrepancy of opinion respecting colchicum arose from a want of uniformity in the strength of the preparations. The wine obtained from the seeds readily acted on the bowels, while that prepared from the root with difficulty produced purging.

Mr Hutchison mentioned that a new preparation of colchicum, prepared from the flowers, had been recently introduced into practice, and had been found eminently successful in rheumatism.

Mr Harrison remarked, that colchicum produced a decided sedative effect, and

mentioned that death had occurred from a very moderate dose of this medicine, the pulse becoming intermittent, and the body losing its vital heat.

Dr Bennet remarked, that Sir Henry Halford had mentioned, that colchicum frequently cured gout without producing any sensible evacuation.

February 28, 1842.

Living Animals passed per anum.—Mr Dendy exhibited to the Society a dead slug which had been passed per anum by a child, two years and a-half old. The slug had lived and moved for about six hours after its expulsion; it was about an inch and a-half long, and about the thickness of the little finger. About five weeks ago, the child came under Mr Dendy's care for ophthalmia, and from that time to the expulsion of the animal, the health of the patient had been very indifferent; convulsions and startings during the sleep occurring, and a slight remitting fever being present; but there was no obvious affection of the alimentary canal. Within twenty-four hours from the expulsion of the slug, the ophthalmia entirely subsided, and shortly afterwards, the health of the patient was perfectly restored.

Mr Hancock remarked, that he had found strumous ophthalmia in children to be very frequently dependent on the presence of worms in the alimentary canal, and that he treated the disease accordingly.

Dr Bennet thought it possible that the slug had been swallowed. Living animals resisted the action of the gastric juice, and he thought that instances of leeches living for some time in the stomach were upon record.

Mr Proctor said, that in such cases it was wise to ascertain whether the patients or friends had any object to gain by deception. He feared that the practice of purging children affected with strumous ophthalmia would prove hurtful to the general health, especially if the strength was not supported by appropriate treatment.

Mr Dorvill had seen mussels ejected alive from the stomach three days after having been swallowed.

Dr Alison thought it possible that the slug had been swallowed, and had remained in the alimentary canal. Many instances were on record of leeches and other animals remaining for a considerable period in the stomach, and of being vomited alive. The vitality of the animals formed a protection to them against the action of the secretions, and the chemical powers of these juices were frequently impaired by disease. In the alimentary canal of some of the lower animals, recently killed, it was not uncommon to find living animals which had been swallowed as food.

Mr Crisp had experienced great difficulty in expelling lumbrici, but had found the oil of turpentine very efficacious in cases of ascarides.

Mr Dendy said, that the tænia was most successfully treated with oil of turpentine and castor oil: the lumbrici yielded readily to the muriate of soda, while ascarides were easily destroyed and expelled by hydrargyrum cum creta, tonics, and enemata of lime water.

Mr Proctor mentioned that the aloetic injection was a very successful remedy for ascarides.

[*Note.*—Collini mentions that a lacerta aquatica was found alive in the stomach two days after it was swallowed, and Dr Mason Good informs us that frogs and serpents have for a longer period resisted the action of the stomach, and that leeches have thriven and grown to an enormous size in that organ.]

March 7, 1842.

Scirrhus of the Rectum.—Dr Clutterbuck related the case of a man aged 50, whose general health had been good till within the last six months, during which period his bowels were relaxed three or four times daily; the stools were tinged with blood; griping pains were experienced in the abdomen. When seen by a surgeon on the 19th ult., the patient was suffering acute pain in the abdomen, occurring at intervals of half an hour or an hour, neither increased nor diminished by pressure; vomiting occurred; the pulse was 80, full and strong; the tongue was furred; the bowels had not been moved for two days. Dr Clutterbuck now saw the patient, who was affected with great tenderness of the abdominal region, and febrile symptoms. He was bled; purgatives and enemata were administered, but the patient died.

Autopsy.—The large intestines were found filled with feces, and there existed a

stricture of the upper part of the rectum, from scirrhous degeneration. The case, when viewed in its last stage, appeared to be one of simple enteritis, the history having been imperfectly given by the patient. Purgatives caused great pain. The case proved that ineffective evacuations were not incompatible with stricture.

Dr Bennet referred to a case similar to that just related. After large quantities of feces had been passed, a considerable induration was felt about the colon. In order to assist the diagnosis in such cases, he recommended examination per anum, and percussion. Copious injections of simple fluids often relieved these affections.

Dr Clutterbuck remarked, that had he been aware of the precise nature of the disease, he would have pursued a more palliative treatment. He believed such cases were most successfully treated by strict attention to diet—those articles of food only being used which yielded little feces, such as broths and milk, and by avoiding irritating purgatives and enemata.

Mr Hird mentioned that he had lately met with a case of obstruction from stricture of the rectum. The patient had night sweats, and was evidently sinking. Mr Hird had performed the operation for artificial anus, recommended by Amussat. The position adopted was that commonly used in lithotomy; an incision about two and a half inches long was made over the sigmoid flexure of the colon, down to the fascia transversalis, which was then carefully divided over a director. The peritoneum was now raised from the bowel, and a perforation made into this tube. A piece of lint was left in the wound. The case seemed to be going on well, till the twelfth day, when peritonitis occurred, causing death in the course of a few days.

Autopsy.—Scirrhus of the rectum was discovered.

Mr Crisp doubted the propriety of the operation under such circumstances, but thought it might be useful in cases of intus-susception.

Mr Proctor said that effusion of the contents of the bowels into the abdominal cavity in this operation, was to be apprehended.

Dr Bennet related a case which had occurred to a German surgeon. It was one of tumour in the abdomen. The surgeon cut down upon it, and established an artificial anus.

Dr Clutterbuck made some remarks in the course of the evening, on the prevalence of catarrh with great oppression.

March 8, 1842.

The anniversary meeting was held to-day, at the London Coffee-House, Ludgate Hill. The scrutator's list was read, when it appeared that the following officers had been chosen. PRESIDENT FOR THE ENSUING YEAR—Mr Pilcher. VICE-PRESIDENTS—Dr Clutterbuck, Dr James Risdon Bennet, Samuel Proctor, Esq., William Kingdon, Esq. TREASURER—Nathaniel Clifton, Esq. LIBRARIAN—W. C. Dendy, Esq. SECRETARIES—H. P. Robarts, Esq., Dr S. Scott Alison. SECRETARY FOR FOREIGN CORRESPONDENCE—Dr Davidson.

Mr Hancock proceeded to deliver the anniversary oration; after which the president presented the Fothergillian medal to Dr James Risdon Bennet, for his Dissertation on Acute Hydrocephalus. The Fellows of the Society, together with their friends, then sat down to dinner.

March 14, 1842.

Mr Pilcher, on taking the chair for the first time, as president of the Society, expressed his sense of the honour which had been conferred upon him. He called upon the Fellows to support him in his efforts to promote the prosperity of the Society.

It was agreed, that in consideration of the eminent services rendered to the Society by the late president, Dr Clutterbuck, not only the usual vote of thanks should be passed, but that also an address be presented to him.

The thanks of the Society were voted to the Treasurer, the Librarian, and the Secretaries, for their services during the past year.

The thanks of the Society were voted to Mr Hancock for his oration, and a desire expressed that it might be printed.

A case of perforation of the stomach by disease, with remarks, was read by Dr James B. Thompson.

Several members partook in a discussion as to premonitory symptoms in such cases, and on the characteristic nature of the collapse which follows effusion into the peritoneal cavity.

March 21.

Mr PILCHER, President, in the chair.

1. *Gonorrhœal Rheumatism.*—Mr Headland made some remarks on the disease called, very inappropriately he thought, "gonorrhœal rheumatism." One of its most marked premonitory symptoms was a blood-shot appearance of the conjunctiva, followed by pains in the shoulder, elbow, or other joints, soon after the patient retired to rest. He (Mr H.) had tried various remedies, and thought that he had seen the iodide of potassium in small doses do most good; but he found it to be an affection which requires some months to get completely rid of, whatever remedies are employed.

Dr Risdon Bennett asked if colchicum had been tried in these cases, and was answered in the negative.

2. *Gonorrhœa.*—The Secretary said he used a course of purgatives, followed by copaiba.

Mr Proctor said he was a disciple of the old Abernethy school, and placed great confidence in purgatives and the antiphlogistic treatment. He often observed a very high state of fever, nay delirium, accompanying first cases of the disease, and the mother and family were generally greatly alarmed about the young gentleman having a violent attack of fever.

Dr J. B. Thomson said, with regard to the use of the *iodide of potassium*, that he had seen its effects produced on the mouth of the patient. An old gentleman taking it in the small dose of two grains, found its peculiar metallic taste in his mouth four hours after it had been given. It could hardly be supposed that this rapid action had been so soon produced through the patient's system. It appeared rather that this medicine is capable of causing a local and immediate action on the salivary glands, and acutely sensitive mucous tissue of the mouth and fauces. As to the use of injections, Dr Thomson could not say anything as far as regarded the nitrate of silver injection, never having tried, or seen it tried; but as far as a few cases would go, he could speak with some degree of confidence as to the use of *creasote in rose water* in the early stages of the complaint, before the inflammation had extended far into the canal of the urethra. His attention was first drawn to it by noticing its very beneficial results in other cases of morbid discharges from mucous canals and passages, such as the nose, mouth, &c.

When copaiba is to be given, Dr T. recommends the extract. It could be given in pill, and would not be followed by the cutaneous rash which sometimes results from the other forms in use.

Mr Clarke, Mr Elliott, Mr Dendy, and others joined in the debate.

March 28.

Mr PILCHER, President, in the chair.

1. *Observations on a Case of Sympathetic Pruritus, by Mr Dendy.*[1] Mr Proctor observed, that pregnancy was frequently accompanied by cutaneous diseases.

Mr Bennett considered Mr Dendy's case one of nettle-rash, accompanying which affection there was frequently an irritable condition of the nervous system. Pregnancy and mental excitement were frequent causes of the affection. Some cases required depletion at the commencement, but in almost all of them a tonic plan of treatment was indicated. Sulphuric acid in combination with a bitter infusion, was one of the best tonics in these cases.

Mr Linnecar thought that in Mr Dendy's case the pregnancy was the cause of the irritation of the skin. In the pruritus occasioned by opium, the skin disease was usually preceded by sleep.

Dr Clutterbuck said, that prurigo was often a very distressing disease among women, particularly at night; sulphuric acid was often employed usefully; and the warm bath sometimes afforded relief. In one case of prurigo in the arm of a young lady, the application of olive-oil proved useful. The suffering in this case had been extreme, and many remedies had been employed without benefit.

Dr Chowne had seen cases of pruritus dependent on spinal irritation; prurigo of the private parts in females was usually very obstinate, and resisted the ordinary means of treatment. He thought that the disorder of the stomach and bowels which

[1] This paper is published in full in the Lancet of April 16, 1842.

attended pregnancy was more frequently the cause of skin diseases than the utero-gestation itself.

April 4.

Mr PILCHER, President, in the chair.

1. *Observations on the Prevention and Treatment of Apoplexy and Hemiplegia. By Dr Marshall Hall.*—The author said, in bringing the important subject of this paper before the Society, he had no hope that he could offer anything new. His object was rather to seek information, which its free discussion by the members of this Society could not fail to elicit.

The question of the causes, nature, prevention, and treatment of apoplexy and hemiplegia was a very complicated one. He thought the attention of physicians, in reference to the prevention and treatment of apoplectic and hemiplegic attacks, had been far too much confined to the question of plethora as the disease, and of depletion as the remedy. It was to him certain that such attacks might and did occur quite irrespective of general plethora; nay, that they occurred in connection with the opposite condition of the system, that of inanition and anæmia. Nor was a state of anæmia the only other condition besides plethora which led to the apoplectic or hemiplegic attack. Morbid conditions of the stomach and morbid conditions of the intestines were other sources of these seizures. But he had also observed the occurrence of apoplectic affections under other circumstances; other indubitably predisposing causes of the apoplectic seizure were dyspepsia, cachexia, and gout. Nor was even this view of the subject sufficiently extended; the liver and the kidney must do their office. These sources of the apoplectic or hemiplegic seizure consisted in conditions of the general circulatory system, and of the blood itself. There were still others of a different kind.

The first of these was disease of the heart; and this consisted, first, in hypertrophy, with augmented impulse given to the arterial blood; or, second, indilatation of the heart and disease of its valves, impeding the reflux of the blood along the veins.

The second was disease of the capillary vessels, of the minute arteries, or of the minute veins of the brain and its membranes.

Lastly, there were causes of apoplexy in the muscular efforts, by which the action of the heart itself was augmented, as in violent running, the ascent of a mountain, &c., and in other muscular efforts, by which the return of venous blood was impeded, as the efforts of vomiting, or for the expulsion of the fæces; and still more, of parturition.

This view of the causes of apoplexy would sufficiently denote the complexity of the problem of the prevention and treatment of the apoplectic and hemiplegic attack; for that prevention depended on restoring the system to a state of what may be termed equilibrium, in regard to plethora and inanition; to the removal of irritating or morbid matters from the primæ viæ; to the correction of the morbid diathesis in dyspepsia, gout, and cachexia. The prescription must include remedies and regimes to meet all these circumstances, and, as he had stated, the problem was by no means either an easy or a simple one. Yet another element in the problem was that which related to the local or topical remedies. On each of these sources of the apoplectic and hemiplegic attack, he proposed to make a few observations. These observations would be principally addressed to the medical practitioner; but as far as they might relate to regimen, they might, he thought, be profitably considered by the patient.

(1.) *Of Plethora, or Fulness.*—This cause of the apoplectic or hemiplegic seizure was that which had received most attention, or rather it was that *towards* which medical opinion was most biassed, not to say prejudiced. It was unnecessary for him to describe the symptoms of this condition so well known. The most satisfactory mode of treatment was to open a vein and allow the blood to flow from an ample orifice, the patient being placed in the perfectly erect position, until incipient syncope was induced; the quantity of blood which thus flowed was the diagnosis and measure of the disease in every respect. If the patient were young and robust, if the plethora were decided, and especially if there were real congestion and no laceration of the brain, a large and proportionate quantity of blood would flow before the slightest degree of syncope was manifested. No other measure afforded at once such security to the patient, and such information to the physician. It was impossible for him to speak in too high terms of the advantage of this measure in both these respects. In reference to blood-letting, there was this important question, Was the case one of *congestion* or *pressure*, or was there actual hemorrhage with *laceration* of the substance of

the brain! In the former case, much blood would flow before incipient syncope occurred, and much might be—must be taken; but in the latter the injury had inflicted a shock upon the system, and little blood flowed before syncope appeared; and even the loss of that little was difficultly borne. To take more would be death! It might be said that we ought to distinguish the two cases *à priori*. He replied in the words of Celsus, "Id votum est." Turgidity and flushing denoted congestion, and pallor and collapse might denote laceration. But many cases occurred in which nothing so marked was observed; and in these, in the absence of an earlier and more perfect diagnosis, he knew by experience, that the plan of instituting blood-letting proposed, afforded most important and salutary information, leading us on to take more blood in the case in which greater depletion was required, and checking our depletion in those in which it would not be either well borne or remedial. But having made and repeated this statement on other occasions, and the profession being, he believed, well acquainted with it, he proceeded at once to another topic.

(2.) *Of Inanition.* It was constantly his lot to see patients who were in jeopardy not from fulness but from inanition, and who had long been kept in a state of anæmia by blood-letting, general or topical, when an opposite treatment was required to restore the equilibrium of the system, and to remove the vertigo and other symptoms threatening an attack of apoplexy. A state of pallor, a disposition to faintishness, palpitation and nervous timidity, the occurrence of the symptoms when the stomach was empty, when the bowels had been relieved, and on suddenly looking upwards, or resuming the upright position on rising from bed, or after stooping, or the recumbent position. Such were the diagnostic *signs* of a state of inanition from a state of plethora. The *history* of the case also afforded a diagnosis; for, although depletion might have appeared to afford a momentary *relief* of the symptoms, it had issued in their *aggravation* in general. An opposite mode of treatment, very cautiously and prudently adopted and pursued, would confirm the diagnosis, by affording a more permanent, though possibly a less immediate and marked relief. It was to the important distinction between the immediate and permanent relief, indeed, that he would draw the attention of the profession. In the case of symptoms portending apoplexy or hemiplegia, although these might arise from inanition, yet they were invariably *relieved* by depletion, although they afterwards returned with augmented force. This effect was very puzzling to the inexperienced practitioner. It was explained by the fact, that the symptoms ceased under the influence of a condition allied to syncope, but returned with the reaction. This subject must be carefully studied, in order that the nature and treatment of the case might be understood. He had next particularly to notice that the state of anæmia was not one of safety. In such circumstances, apoplexy and hemiplegia, with the actual effusion of blood into the cerebrum, had occurred. Such a case was related by the late Dr Denman. It occurred in the midst of exhaustion and anæmia from protracted uterine hemorrhage: a clot of blood was found in the cerebrum. A similar case was detailed by Mr Travers. This latter occurred under the actual use of the lancet, and during the flow of blood from the arm. A third case occurred to Mr Hammond of Brixton, after parturition. The patient was attacked with hemiplegia; she gradually recovered. We might therefore incautiously bleed our patients into apoplexy and hemiplegia! This statement should lead us to be very wary in the use of this remedy in doubtful or protracted cases. Even in cases of injury of the brain, as in concussion, the same question presented itself. This point was admirably illustrated by the following remark of Sir Benjamin Brodie:—"Where bleeding has been carried to a great extent, symptoms frequently occur which in reality arise from the loss of blood, but which a superficial observer will be led to attribute to the injury itself, and concerning which, indeed, it is sometimes difficult even for the most experienced surgeon to pronounce, in the first instance, to which of these two causes they are to be referred. Repeated copious blood-letting is of itself adequate to produce a hardness of the pulse, which we shall in vain endeavour to subdue by persevering in the same system of treatment. In many individuals it will produce headache and confusion of mind, not very different from what the injury itself had previously occasioned." The pallor of the countenance, the effects of position, the effects of fasting or of an active purgative, the history of the case, must be carefully considered in forming our diagnosis. The treatment would then consist in carefully restoring the system to its state of equilibrium.

(3.) *Of Dyspepsia and Cachexia.* There could be little doubt that in dyspepsia the blood itself became contaminated, and, as it were, *cachectic*. On this principle we accounted for the appearance of furunculus and paronychia; for the morbid condition of the tongue and interior of the mouth, the general cutaneous surface, the secretions, &c. He had so often observed symptoms threatening the apoplectic or hemiplegic attack, in conjunction with symptoms of dyspepsia and cachexia, that he had no doubt of the vast importance of a strict attention to this subject. That very day, (Oct. 1, 1841,) he had been consulted by a medical gentleman from Birmingham under these circumstances. One form of this affection was the following:—vertigo occurred with faintishness, sickishness, and a cold clammy perspiration; sometimes there was actual sickness, sometimes much flatus. In these cases the feet and other extreme parts were apt to be cold. The secretion of the liver was frequently defective, and the urine was apt to deposit the lithic acid salts. Nothing could be so injurious as blood-letting. In no case was the loss of blood repaired with such difficulty. The application of a few leeches frequently left a state of debility and pallor which were felt and seen for weeks. The treatment consisted in the correction of the secretions, and in the infusion of tone and general health into the system. The compound decoction of aloes, the infusion of rhubarb, of gentian, of cinchona, singly, or better, mixed together; sarsaparilla, the vinum ferri, the bicarbonate of potass; stomachics, tonics, and antacids, in a word, were the principal internal remedies. But with these, a mild, nutritious diet, a system of gentle exercises, early hours, the tepid salt-water shower-bath, and a strict attention to the condition of the feet and general surface, by means of the flesh-brush, flannel, and a frequent change of shoes and stockings, should be conjoined. Those engaged in the harassing affairs of a London life should sleep in the country, and cherish the utmost quiet of mind.

(4.) *Of Gout.* But he had frequently traced a connection between gout and its frequent attendant, the lithic acid diathesis, and the apoplectic and hemiplegic seizure. It was not merely plethora, or the opposite state of inanition, which led to the apoplectic attack. The morbid state of the blood in dyspepsia and cachexia also disposes, as he had already said, to this affection. The same remark applied to the condition of the system and of the blood, especially in gout; and, as he should have to observe immediately, the same disposition obtained in several morbid conditions of the liver and kidney. A nobleman, now no more, suffered in succession from gout and the herpes zoster, and the urine deposited the lithites copiously. He was relieved by the appropriate remedies, and became affected with an apoplectic (or epileptic) attack. A similar attack (without hemiplegia) occurred several months afterwards, and a third attack proved fatal. This gentleman was pallid, the prolabium being white. A steady perseverance in such remedies as the decoctium aloes compositum, the bicarbonate of potass, and the vinum ferri, had in other cases effectually averted the threatened evil. But he must make another remark. The vinum colchici should be given in very minute doses, as five drops thrice a-day, also steadily and perseveringly, to overcome the specific gouty diathesis. The lithic acid diathesis was not the only urinary disorder which led to apoplexy and hemiplegia. This attack, it was well known, occurs in the case of diabetes and in that of albuminous urine. Although he had designated the attack apoplectic and hemiplegic, it was sometimes more allied to epilepsy than apoplexy. The gentleman to whose case he had briefly adverted, was affected with minute ecchymosed spots on the forehead, which he had only observed under three circumstances, viz., after severe vomiting, the effects of parturition, and the epileptic attack; when he saw him, soon after the second seizure, the insensibility had passed away, and there was no hemiplegia.

(5.) *Of Disease of the Heart.* It had long been supposed that disease of the heart is a cause of the apoplectic seizure, and hypertrophy of that organ had been fixed upon as the most influential in this respect. On this question the pathologists of France were much divided. Of the two latest writers on the subject, M. Andral was of opinion that hypertrophy was really a frequent cause of apoplexy; whilst M. Louis was of the opposite opinion. There could be no doubt that, *cæteris paribus*, hypertrophy of the heart would co-operate in inducing the apoplectic attack; but he thought that a much more energetic cause of apoplexy, and of congestion and hemorrhage in general, was that form of disease which impeded the return of the venous blood from the brain, viz., dilatation and valvular disease. The worst form of hypertrophy might be

unattended by symptoms or appearances of congestion; but no severe case of dilatation or of valvular disease ever existed, without lividity of the countenance, dozing, and other appearances and symptoms of apoplectic tendency. Altogether, however, we wanted a series of cases, carefully taken and analysed, and statistically given, to *establish* the truth of the real influence of disease of the heart in inducing the really apoplectic seizure.

(6.) *Diseases of the Capillary and Minute Vessels.* The influence of this cause of apoplexy was placed beyond question by post-mortem examination. Sometimes the morbid appearance was a dilated condition of the capillaries; sometimes an ossified condition of the minute arteries (!); sometimes a minute aneurism. Another important topic was that of "rammolissement," or softening of the brain, as the *cause*, and as the *effect* of the apoplectic or hemiplegic seizure. In resuming the subject he might remark, that it was not plethora alone which predisposed to the apoplectic and hemiplegic attack; the very opposite condition of the system, or anæmia, whether it arose from the loss of blood by blood-letting, or hemorrhage, or from defective sanguification, was not free from this danger; dyspepsia and cachexia, as they induced external disease, as seen in furunculus, paronychia, &c., might also induce a paralytic affection, a morbid condition of the blood taking the place of plethora or anæmia.

(7.) *Of Muscular Efforts.*—He might make the same remark in regard to muscular efforts, which he had done in regard to disease of the heart—those efforts which opposed resistance to the reflux of the venous blood, were much more efficient causes of the apoplectic seizure than those efforts which augmented the momentum of the arterial blood. Thus, we rarely heard of the occurrence of apoplexy during the violence of the race, during the ascent of mountains, &c., but such an occurrence at the water closet was by no means uncommon; and we all knew how apt the parturient efforts were to induce congestion of the brain, and the consequent apoplectic seizure. It would be most interesting to correct our ideas on these subjects by a cautious appeal to facts.

Dr Hall, in reply to a question, detailed a case in which the symptoms threatened apoplexy. The patient had been bled much and purged, was pallid, and there was a *bruit*, as from loss of blood, perceptible. The patient was worse before breakfast than after dinner, and could not look up. He recovered under the employment of mild chalybeates. This was an extreme case; there were many of an intermediate character. Dr Hall also expressed his opinion that the skull always contained the same quantity, but the blood might be occasionally more serous, and give rise to a pallid condition of the brain; but in this state rupture and effusion might take place.

Mr Bird thought that apoplexy more frequently resulted from arrest of the venous than from the acceleration of the arterial circulation.

Dr Hall observed, that great hypertrophy of the heart might exist for a very long period without producing apoplexy, but those obstructions dependent upon dilatation and valvular disease were constantly attended with apoplectic symptoms. Violent efforts which accelerated arterial action did not produce apoplexy, but in muscular efforts occasioning venous congestion, such as straining at stool, parturition, and lifting a weight, the larynx was closed and the venous circulation arrested.

Dr Bennet considered that extreme increased arterial circulation seldom produced apoplexy. Hypertrophy of the right side of the heart seldom produced apoplexy of the lungs. Much more serious results occurred from venous obstruction. Those conditions of the heart which caused impediment to the respiration materially affected the composition of the blood. This caused an alteration of the capillary circulation. Our practice ought to be influenced by these circumstances. Blood-letting was often injurious, and we could not be too cautious in our resort to it.

Dr Clutterbuck said, that the subject under debate was one of much importance. It was difficult to cope with all the causes of apoplexy as stated in the paper; if they indeed were causes, some of them, he thought, were only of a remote kind. The subject should be treated physiologically. What was the state and condition of the organ affected in apoplexy? The brain was undoubtedly the seat of this affection, because its symptoms were simply the suspension of the primary functions of this organ, as voluntary motion, sensation, and loss of mental power. Other organs might be disturbed also; there might be vomiting and dyspepsia previously, and the action of the heart might be disturbed; but these were not the causes of the apoplexy. What, then, was the condition of the brain? General plethora was not the cause, and

the state of anæmia was equally inapplicable. Dissection itself often failed to inform us, for it frequently gave the effects rather than the causes. There was generally effusion, but this was sometimes wanting; there was no one appearance invariably found. Intoxication was a state of apoplexy, distinguishable from the common form of the disease only by its peculiar cause. Here there was no extravasation of blood, and no effusion of serum. Like many of the causes mentioned by Dr Hall, intoxication was only a remote one. The effects of alcohol, great mental excitement, and other causes, were easily explained; the functions of the brain became first disordered, then impeded and suspended. As the quantity of blood was always the same in the brain, what ensued when the action of the arteries became increased? These vessels became dilated and augmented in size, and this could only occur from the compression of the veins, by the blood being squeezed out of them, and thus the circulation through the organ became impeded, or altogether suspended. Under these circumstances what was to be done? Where nothing was injured, as in intoxication, time itself would restore the functions. There was a predisposition to apoplexy in certain individuals. Many cases depended on effusion, and this had the same effect as increased arterial action in interrupting the circulation; the same interruption occurred in serous effusion after inflammation. Blood-letting in cases of apoplexy was often not necessary, and was too indiscriminately resorted to. In cases where there was extravasation, bleeding was only of service by taking off the violence of the circulation, which was the foundation of the disease; beyond this the abstraction of blood was useless.

April 11.

The Society was occupied during this evening with a discussion on Dr Marshall Hall's paper.

April 18.

The discussion on Dr Clutterbuck's paper continued.

April 25.

Testimonial to Dr Clutterbuck.—A testimonial to this gentleman, on retiring from the chair, was presented by a deputation formed by the Society for that purpose. The document expressed the feelings of admiration which the members entertained for the character and attainments of Dr Clutterbuck; and, above all, for his unwearied attention to the interests of the Society. The Doctor returned a suitable answer.

May 2.

Quantity of Blood within the Cranium.—Mr Solly contended, from considerable experience, that no fact could be more clearly established than that the brain was an elastic, and, therefore, compressible organ, and, of course, might contain more blood at one time than another. He had examined the brains of many lunatics, and he was convinced that insanity was invariably dependent on inflammation of the hemispherical ganglia. He took occasion to remark, in the course of his observations, that the present mode of treatment generally pursued in insanity was a disgrace to the medical profession.

May 9.

Mr Pilcher, President, in the Chair.

1. *Blood in the Brains of Animals bled to Death.*—Mr Crisp, in relation to the late discussion on the quantity of blood in the brain, stated that he had last year made a series of experiments with the view of determining the condition of the brain of animals bled to death. The result was quite different from that stated by Dr Kelly, of his experiments performed for a similar purpose. Dr Kelly found the brain always full of blood, while he, on the contrary, had found it to be bloodless; nor could he discover any corresponding quantity of serum to make up the deficiency. Mr Crisp's experiments consisted in killing dogs and rabbits, by dividing the carotid artery. The brains of the same kind of animals killed by poison, and other means, presented a very different appearance.

2. *Liquor Cinchonæ Flavæ.*—Mr Robarts called the attention of the Society to this preparation of bark, which he had formerly brought under the notice of the Society. A discussion ensued, which is reported in *The Lancet* of May 14.[1]

[1] *Vide* Mr Robart's Memoir, in The Monthly Journal of last year, p. 888.

3. *Parturition without Pain.*—Mr Linnecar related the following case:—He was requested to see a lady, about twenty-six years of age, pregnant with her first child, and within about five weeks of her full time. He found her suffering from an enormous swelling of the right leg, which was enlarged from the foot inclusive, upwards to the trochanter major; the nymphæ and labia, but particularly the former, were much enlarged, and projected and rested upon the thighs; the general health was good, but her sleep was disturbed by a peculiar catching in the limb while she was dreaming of swimming in the air. The cellular tissue of the affected parts was so much distended that several punctures were made in the nymphæ, from which a considerable quantity of fluid oozed. Several punctures were subsequently made in the leg below the knee, from which, also, there was a considerable discharge of serum. The enlargement, however, still continued; inflammatory action came on round the punctures in the leg; and it became a question whether it would not be advisable to produce premature labour. This latter step, however, was rendered unnecessary, as labour came on naturally last Saturday, on which day Mr Linnecar was hastily summoned to his patient. On his arrival he found the membranes had already ruptured, and the head of the child was presenting; the uterus could be distinctly felt to be acting when the hand was placed on the abdominal parietes, but the patient *experienced no pain whatever*. The usual pains came on, however, as the pressure on the perineum increased, and the child was born alive. There was scarcely any discharge whatever during the labour, and there was none of the usual lochial discharge. There was, however, a most copious discharge of water from the uterus as well as from the leg: the leg and thigh that morning (Monday) were diminished in size, but the cuticle of the leg was dead, and there was a kind of purulent secretion underneath it; with this he had not interfered; the leg was tender; the pulse about 100, and small. There was yet no secretion of milk. Looking at the facts he had stated, that there was no pain during parturition, and no natural discharge during or after the labour, he thought such a state of the system was indicated, that a fatal result to this case must be anticipated. In all the cases which he had seen of labour occurring without pain, the mother had fallen a sacrifice. He thought the presence of pain was a beautiful provision of nature for the preservation of the offspring.

Mr Hooper had seen several cases of labour unaccompanied by pain, in which the mothers did not die. In a case of a woman labouring under venereal disease, for which her husband had salivated her, labour came on during an attack of spasmodic cholera, without the woman being at all conscious of the proceeding. She recovered, the child was dead.

Dr S. Alison should not look so unfavourably as Mr Linnecar did on the case under discussion. He had attended many women who had extreme anasarca of the legs previous to parturition, but who had done well. Cases of labour without pain had occurred in his practice; they were *not* fatal.

Mr Pilcher suggested, that in Mr Linnecar's case the discharge was from the nymphæ and not from the uterus, which, he thought, was not secreting at all. Was it not probable that uterine phlebitis was present?

May 16.

Mr Pilcher, President, in the chair.

The Society was occupied with further discussion on Mr Linnecar's case, and afterwards upon the treatment of insanity.

May 23.

The debate on the treatment of insanity was continued.

May 30.

The discussion on insanity was renewed.

This being the last meeting of the session, the Society adjourned till September 26th.

MISCELLANEOUS MEDICAL NEWS.

University of Edinburgh. Unanimous Election by the Town Council of Mr Miller to the Chair of Surgery, on the 19th July.

The room was crowded to excess, from the great interest felt in the appointment of a successor to the late Sir Charles Bell.

Mr Goikie thought the election ought to be delayed for one week, in order to allow Mr Miller to reply satisfactorily to certain grave charges brought against him in two anonymous letters extensively circulated, and bearing the signature "Spectator." Mr Geikie read a letter from Dr Lewins of Leith in favour of delay, upon the same grounds. Bailie Richardson said, that if Mr Geikie's motion were seconded, he would make some observations upon it, and the speech with which it had been introduced; but, in the mean time, he begged to move the previous question.

No one seconded Mr Geikie's motion.

The following letter, from Dr J. A. Robertson, one of the candidates, was then read by the clerk.

"To the Right Honourable the Lord Provost, Magistrates, and Town Council of the City of Edinburgh,

"My Lord and Gentlemen,—I beg leave respectfully to tender my acknowledgments for the courteous manner in which I have uniformly been received, when waiting upon the patrons individually. In my testimonials, which have now been completed and laid before you, I have adduced evidence that the number of pupils attending my lectures has been greater than that of any of my competitors in teaching; that I have discharged the duties of medical officer to most of our public charities; and that I at present hold the offices of senior acting surgeon to the Royal Infirmary, and consulting surgeon to the Eye Dispensary of Edinburgh; that I have formed a large surgical museum.

"As a proof of the extent of my reputation as a practising and consulting surgeon, I have laid before you general testimonials from 161 medical practitioners in different cities and counties of Scotland, most of whom I have met with in consultation, or have become known to by their patients sent to me for advice, and from 51 distinguished medical men resident in Edinburgh and other parts of the kingdom.

"In proof of my qualifications as a lecturer, I have presented testimonials from fourteen of my fellow-teachers in Edinburgh, from twenty professors and lecturers in London, Dublin, Glasgow, &c. from forty-eight of my former pupils, now practitioners, and from the Venerable Archdeacon Williams, and her Majesty's Solicitor-General. In the appendix, I have included testimonials received in 1832 and 1834, to show that my status in the profession, and reputation as a lecturer, are not of recent origin, or dependent on fortuitous circumstances.

"It is not without feelings of pride that I refer to the very flattering terms in which my lectures, writings, operations, and practice are spoken of by so large and so distinguished a portion of the profession, and who are so able to form an opinion of my qualifications for the Chair of Surgery.

"Having learned that, notwithstanding so large a body of evidence in my favour, a majority of the Council have decided on giving their votes in favour of Mr Miller, I now beg leave respectfully to withdraw my application as a candidate for the chair. I regret to learn that many of these gentlemen have been led to this decision by the numerous injurious and unfounded reports which have been so assiduously circulated regarding my age and state of health, and which I trusted had been sufficiently disproved. In justice to the large body of distinguished members of the profession who have honoured me by their approval, and in justice to myself, I feel called upon to state, that not even a whisper has been heard against my moral or professional character. I have the honour to be, my Lord and Gentlemen, your most obedient servant,

"J. A. Robertson.

"Queen Street, Edinburgh, 19th July 1842."

Bailie Richardson then rose to propose that Mr Miller should be elected to the chair of Surgery. He would merely say that it was after the most serious and grave consideration of the matter, that he had resolved to do so. He was at one time strongly in-

clined to vote for Dr Robertson, but a sense of public duty now forced him to do otherwise. Without saying another word, he begged to propose Mr Miller.

Sir William Drysdale seconded the motion, and in doing so, spoke of the high testimony in favour of Mr Miller, borne by Mr Liston, than whom there was no one more distinguished as a surgeon in England, and by Professor Syme, whom he might call, without fear of contradiction, the first surgeon in Scotland.

Mr Melville ventured to express the hope that the election to which the Council were about to proceed, would be unanimous. And he did so on the ground not only of Mr Miller's merits and attainments, but he appealed to those who might be favourably inclined to the other candidate now standing, how far it was becoming, under existing circumstances, to divide the Council on an occasion like the present, when they all knew what would be the result. He felt assured, none would be more ready than Mr Miller himself to admit, that the honour they were about to confer on him was in no small degree enhanced, when they considered the talents, the great and commanding talents, of those who had been opposed to him. Any one who had attentively perused the testimonials of the competitors, could not fail to admit that both Mr Lizars and Dr Robertson were men of the highest eminence in their profession, and calculated to throw lustre on any medical school with which they might be connected.

The Lord Provost said, that the duty they had to discharge was a very important and a very responsible one, and he had endeavoured to come to a conscientious and unbiassed decision in regard to it. All the three candidates who had been before them were distinguished men,—so distinguished, that he had greatly hesitated in coming to a decision as to their respective merits. While he was thus hesitating, however, he heard that the majority of the Council had already come to the conclusion of voting in favour of Mr Miller, and, for the sake of unanimity, he had immediately acquiesced in their decision. He was now, accordingly, prepared to vote for Mr Miller, and he had no doubt but th t the Council, the University, and the public, would never have reason to regret the choice.

Mr Robertson was not guided by testimonials in coming to his decision on this subject. Had he been guided merely by testimonials, he would have preferred both Mr Lizars and Dr Robertson to Mr Miller. Testimonials were anything but safe things to go by; and the very exaggerated wordings in which they were couched, showed them to be altogether absurd, useless, ridiculous, and pernicious. He threw out this for the consideration of future aspirants to civic patronage—that men might know that all the members of Council were not so stupid as to be guided by the mere bulk, but were sufficiently informed to select what was useful and valuable from what was presumptuous and obtrusive on the part of obscure, unknown, and very indifferent persons, in the estimation at least of members of their own profession. And as making up a person's mind in this matter had been rather a tardy affair, he had made up his mind at the same time as to how he would vote in reference to the next chair—that of Pathology. He begged leave now to intimate, that he would vote for Dr Craigie.

Mr Logan said that he had intended making a few remarks, inasmuch as the election of a Professor was not an every-day matter; but he had been so much anticipated, partly by Mr Melville, and partly by Mr Robertson, that he thought he might almost forbear. I may notwithstanding observe, (he added), that, though I ultimately came to approve of Mr Miller on what appeared to me sound and sufficient grounds, I must own that for many weeks I hesitated very much indeed betwixt him and Dr Robertson. And now that that gentleman has with so much propriety of feeling withdrawn his claims, I think it just—to say nothing of its being generous—to state, that none of the reports which have been circulated regarding Dr Robertson's age and state of health—reports, I feel assured, as ill founded as, if credited, they are likely to prove injurious—shall prevent me from most favourably entertaining his claims on some future occasion, should any such occur. No one can look at his testimonials—no one can listen to the voice of the medical profession, expressed in the less obtrusive, and, perhaps, more authentic form of private opinion, without seeing that he is a gentleman in no common degree fitted to adorn a chair within our University. Before sitting down, I beg just to say one word, which may perhaps be useful on some future occasion, relative to the testimonial-giving system, as to which I concur in Mr Robertson's conclusions regarding it, without exactly

adopting all his language. The extent to which many of these testimonials amount is certainly altogether unbearable; but less surprise might perhaps be excited, was it known, as I am credftably told is the case, that certain warm-headed students, most zealous neophytes of the medical art—enamoured probably of the idea of patronising a future Professor—were accustomed to traverse the country in gigs, actually soliciting, or, I should say rather, furnishing orders for testimonials. There is a maxim—in good repute with lawyers, and not to be lost sight of by doctors—applicable to all evidence, and eminently so in regard to such evidence as this—*testimonia non numeranda sed ponderanda*—testimonials are to be esteemed by weight, not by tale. Now, I put it to every one who unfortunately has felt it his duty to read much of what we lately had, whether nine-tenths—certainly four-fifths—of the parties favouring the candidates with their testimonials, would not have been better, as a preliminary qualification, of some testimonials themselves? Looking to much of these heavy endless pamphlets, a man—without being at all ill-natured—is apt to recall one of Mr Gibbon's quiet caustic sentences, when, commenting on the testimony of an Arab writer in behalf of the prodigious vigour of a follower of the prophet, he remarks, "Abu Raafe says he was an eye-witness; but, who will be witness to Abu Raafe?"

Dr Macaulay concurred with the previous speakers in his opinion of Dr Robertson's merits; and with respect to the health of that gentleman, he thought it but justice to state, that for twenty years, during which Dr Robertson and himself had been fellows of the College of Surgeons, he had never known him absent from duty. He (Dr M.) agreed also with Mr Robertson as to the high character of the testimonials in favour of Mr Lizars. The character of Mr Lizars as a surgeon, and as a teacher, was of the highest kind; but it is one of the hardships of public men, for which they get little credit, to be obliged, on public grounds, not to vote for men whose merit they knew, and to whose friendship they were indebted. This was his case with Mr Lizars. As to Mr Miller, he must be allowed to say, that nothing that had been said of him, either anonymously or with a name, had done him the smallest injury with the profession,—that his merits were esteemed, and that he would be an honour and a source of reputation to the University.

The Lord Provost then declared Professor Miller unanimously elected. This announcement was received with loud applause by those present.

TO THE EDITOR OF THE LONDON AND EDINBURGH MONTHLY JOURNAL OF MEDICAL SCIENCE.

Note on the Structural Changes of the Blood, in the Hemorrhagic Diathesis.

By John Hughes Bennett, M.D. Edin.

Sir,—In the report of the proceedings of the Medico-Chirurgical Society of Edinburgh for the 1st of June, inserted in the last Number of your Journal, it is stated,—"Dr Bennett remarked, that the non-coagulability of the blood, in cases of hemorrhagic diathesis, might perhaps be owing to a change in the blood corpuscles, by which the tendency to form aggregation of the clot might be diminished." I cannot conceive how any one could so much have mistaken what I said on that occasion, or should ever think of ascribing to me such utter nonsense. Every physiologist and pathologist knows, that the coagulation of the blood has nothing to do with the corpuscles, but is a phenomenon altogether connected with the liquor sanguinis. I should not however have corrected so very obvious an error, did I not think the fact I brought forward important, and had not subsequent reflection induced me to imagine that it might explain still farther the mode in which a remedy, considered of great value, acts in such cases.

On hearing the very ingenious paper of Mr Miller, I felt surprised that although he mentioned several changes which the blood undergoes, he never alluded to the structural alteration of the corpuscles. I mentioned that on one occasion I had examined the blood of an individual labouring under purpura hemorrhagica, and found that the larger number of corpuscles were changed in form. Some were of an angular or oblong shape, others serrated or notched at their edges, whilst numerous small shreds or granules were floating loose amongst them. In short, the blood corpuscles were broken down, and presented an appearance similar to what I have seen them do in some specimens of putrid blood. I remarked that not only chemical

but that structural changes in the blood might have something to do with the pathology of the disease. In addition to the observation of Mr Liston quoted by Mr Miller, I find that Mr Lane has found the same appearance both in man and in the horse. (*Lancet*, 1839–40, vol. 2, pp. 777, 8.) Hence then, the hemorrhagic diathesis is connected with a pathological change in the *structure* of the blood corpuscles.

Mr Miller in his paper, and Dr Hay in the discussion which followed it, alluded to the well-known fact, of the benefit derived from purgative doses of sulphate of soda. Now every histologist is aware, that, with the exception of white of egg, there is no fluid which tends to preserve the blood globule in its normal state so well as a weak solution of the sulphate of soda. Mr Miller conceives that it acts on the blood by promoting coagulation, and, I would also add, by its tendency to preserve the corpuscles in a normal state, and thus prevent the morbid structural alterations which they undergo in this disease.

EDINBURGH; 16, PITT STREET, July 15, 1842. J. H. BENNETT.

COLLEGE OF DENTAL SURGERY, BALTIMORE, UNITED STATES.—This institution, though only two years old, seems to be in full activity. The faculty consists of Horace H. Heyden, M.D., Professor of Dental Physiology and Pathology; Chapin A. Harris, M.D., of Practical Dentistry; Thomas E. Bond, jun. M.D. of Special Pathology and Therapeutics; and W. R. Handy, M.D. of Anatomy and Physiology. *Terms of Graduation.*—Candidates for graduation who have attended two full courses of lectures in this College, or one course in some respectable medical college and one in this institution, will be subjected to a critical examination by the faculty, and be required to defend a thesis on some subject connected with dental science; they will also be required to present one or more specimens of mechanical skill in preparing and setting artificial teeth, and likewise be expected to perform certain dental operations in evidence of practical qualification; and, on being found competent, they do all receive the degree of "Doctor of Dental Surgery."—*American Journal of the Med. Sciences*, April 1842.

OBITUARY.

On the 19th May, at Montrose, Dr Robert Shand, R.N.

On the 1st of March, at Rio de Janeiro, from the effects of a *coup de soleil*, A. D. R. Hoggan, M.D., assistant-surgeon of her Majesty's ship Hazard.

At Bo'ness, on the 9th July, William S. Cowan, M.D.

On the 21st June, at Liverpool, P. Smith, Esq., staff-surgeon. His death was occasioned by inflammatory fever, brought on by a wound of the finger received in dissection.

On the 14th April, at Bombay, J. P. De Costa, Esq., M.D., private medical practitioner.

On the 11th May, at Poonah, of spasmodic cholera, W. Parsons, Esq., assistant-surgeon.

At 19 Elder Street, Edinburgh, on the 12th July, Thomas Sanders, M.D., aged thirty-five, eldest son of James Sanders, M.D.

M. Double, member of the Royal Academies of Medicine and Sciences, died suddenly in Paris, on the 13th May, of pulmonary apoplexy.

BOOKS RECEIVED.

1. The Climate of South Devon, and its influence upon Health; with short accounts of Exeter, Torquay, Babbicombe, Teignmouth, Dawlish, Exmouth, Budleigh, Sidmouth, &c. By Thomas Shafter, M.D., Physician to the Exeter Dispensary, &c. 8vo, pp. 258. John Churchill. London, 1842.

It is surprising that the statistics, climate, and medical topography of so important a district as South Devon had never before been properly elucidated by a physician. We recommend the work to those interested in the subject of climate, as one which will give them valuable information on this important subject. It was written, the author states, "in accordance with the suggestion of Sir James Clarke;" and has been compiled from the most authentic documents.

2. The Spas of Homburg, considered with reference to their efficacy in the treatment of Chronic Disease. By Sir Alexander M'Kenzie Downie, M.D.,

Physician in Ordinary to Her Royal Highness the late Landgravine of Hesse Homburg. 16mo, pp. 90. John Churchill. London, 1842.

This little book is more adapted to patients than practitioners. It is, we see, to be had at all the German Spas.

3. The Retrospect of Practical Medicine and Surgery, being a half-yearly Journal, containing a retrospective view of every discovery and practical improvement in the Medical Sciences. Edited by W. Braithwaite, Surgeon to the Leeds General Eye and Ear Infirmary, &c., No. V., January—July 1842. 12mo, pp. 303. London: Simpkin, Marshall, & Co., 1842.

4. Twenty-Eighth Annual Report of the Directors of the Glasgow Royal Asylum for Lunatics, with the First Report of the Physician, (Dr William Hutcheson). 8vo, pp. 63. Glasgow: James Hedderwick & Son, 1842.

A most interesting and excellent report.

5. The Simple Treatment of Disease, deduced from the methods of Expectancy and Revulsion. By James M. Gully, M.D. 12mo, pp. 198. London: John Churchill, 1842.

6. An Essay on Diabetes. By H. Bell, D.M.P., one of the Librarians of the Faculty of Medicine of Paris. Translated by Alfred Markwick, late *externe* to the *Hôpital des Vénériens* of Paris. 8vo, pp. 96. London: Highley, 1842.

This is an excellent monograph, and has appended to it, a valuable select bibliography of the subject.

7. A Treatise on Irritation of the Spinal Nerves, as the source of Nervousness, Indigestion, Functional and Organical Derangements of the principal Organs of the Body, and on the modifying influence of temperament and habits of man over diseases, and their importance as regards conducting successfully the treatment of the latter; and on the therapeutic use of water. By J. Evans Riadore, M.D., F.L.S., late lecturer on surgery, and formerly one of the medical officers to the Bangor Infirmary, the Middlesex Infirmary, and the Royal Metropolitan Infirmary for Children. 8vo, pp. 306. London: John Churchill, 1842.

From a very cursory examination of this work, we are favourably impressed with its merits as a practical treatise.

8. Pulmonary Consumption: its prevention and cure established on new views of the Pathology of the Disease. By Henry Gilbert, M.R.C.S.L. 8vo, pp. 296. London: Henry Renshaw, 1842.

"I lay it down as the grand and prominent feature of my pathology of phthisis, that it consists primarily in a want of discriminating power in the mouths of these vessels, (the lacteals), whereby they are so far changed from their natural state as to admit those inorganizable parts, the residue of the materials of nutrition, which, in their normal and healthy state, they instinctively rejected."—*Author's Preface.*

9. Memoir of the late James Hope, M.D., Physician to St George's Hospital, &c., &c. By Mrs Hope. To which are added, Remarks on Classical Education, by Dr Hope; and Letters from a Senior to a Junior Physician, by Dr Burder. The whole edited by Klein Grant, M.D., &c., &c. 8vo, pp. 358. London: J. Hatchard & Son, 1842.

A most interesting volume. We recommend it to all, but particularly to the junior members of the profession.

TO SUBSCRIBERS AND READERS.

We have this month presented our readers, *without any increase of price to Subscribers*, with four sheets and a half of extra matter, besides using small type in the Review department, and inserting a series of very expensive tables; *thus much more than doubling the cost of this Number.* We assuredly have no reason to complain of want of support, but we cannot allow this opportunity to escape without hinting to our friends, that if they really wish our Journal to be maintained at its present low price, they must become buyers as well as readers.

TO CORRESPONDENTS.

Several communications which have just been received, we have not yet been able to peruse. In our next, the papers of Mr J. J. Ross and Mr John Adams.

*** *All Communications must be addressed to Dr Cormack, 131, Princes Street, Edinburgh.*

THE

LONDON AND EDINBURGH

MONTHLY JOURNAL

OF

Medical Science.

SEPTEMBER 1.] No. IX. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Surgical Cases and Observations. By* JAMES SYME, Esq., *Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen.*

MY DEAR SIR,—In the course of hospital attendance, and also in private practice, one meets with many cases, which, though hardly of sufficient importance to merit separate publication, are nevertheless calculated to afford useful hints, if not for improving the art and science of surgery, at all events for guiding the younger members of our profession through the difficulties which beset the commencement of their progress. Every practitioner who engages in the treatment of surgical diseases, must commit many errors, miss many opportunities of affording relief, and sustain not a few failures, before he can acquire any share of useful experience. But nothing tends so much to lessen the dangers of this practical discipline, as studying the faithful details of obstacles that have been encountered by others, together with the steps by which they have been avoided or overcome; and it is hence the duty of those who possess the requisite opportunities of observation, to make them useful in this way. Various cir-

cumstances for some time past have induced me to discontinue such communications; but for the future, I propose frequently to beg a place in your Journal for surgical cases and remarks, trusting that their value will be estimated by the reader, not individually, but collectively. I remain, my dear Sir, yours very truly, JAMES SYME.

To DR CORMACK.

Nasal Polypus.—Andrew Lawson, aged 47, a letter-sorter in the General Post-Office, was admitted into the hospital on the 23d of April, recommended by Dr Spittal. In the early part of the present year, he observed a growth in the left nostril, which gradually increased, obstructing the passage, and bleeding from time to time. It at length protruded externally, and on several occasions the hemorrhage had been so copious, as to excite serious alarm. The tumour distended the nostril, had a brownish-red colour, with soft, friable consistence, and bled under the slightest touch.

I did not hesitate as to the nature of the disease, which was obviously malignant; and at once decided against attempting to effect removal by evulsion. The simple mucous, or non-malignant polypus, which is merely an excrescence from the lining membrane of the nostril, may in general be easily and effectually extirpated by the forceps, if they are properly constructed and applied. But the vascular pulpy growths which originate from the osseous texture do not admit of complete eradication, except by taking away the bone from which they spring; and as the part affected is usually inaccessible, from engaging the ethmoidal or sphenoidal cells, it is hardly ever possible to effect this. The only prudent course, therefore, in such melancholy cases, is to abstain from interference; especially, as even clearing the nostrils, with the view of temporary palliation, has in some instances proved fatal, by exciting inflammation of the parts within the cranium.

The patient accordingly, after having had the projecting portion of the tumour cut off, was informed that nothing more could be done for his relief, and left the hospital as incurable. He soon afterwards returned to say that the bleeding had increased, and that for the sake of his family he was willing to suffer any operation that afforded the slightest prospect of escape from the certain destruction which plainly awaited him if the disease were permitted to proceed. A careful re-examination confirmed the opinion already formed as to the nature of his complaint, but led me to notice some circumstances favourable for the attempt he desired. Though the nostril was dilated, the root of the nose and nasal bones did not show the slightest appearance of enlargement; there was no pain or uneasy feeling in the region of the frontal sinuses; the eyes were natural as to position and vision; the

morbid growth was confined to one nostril; and it seemed to be connected with the walls of the cavity near the external orifice. As there thus appeared reason to conclude that the upper part of the nose was unaffected, and that the disease originated from the inferior spongy bone, or some other accessible portion of the parietes, I resolved to try what could be done for the poor man's relief.

An incision was made through the upper lip, from the nostril downwards to the mouth, and the flaps were then separated on each side from the gum, so as to afford free space for examining the attachment of the tumour. It then appeared that the growth proceeded from the septum, by a narrow neck not larger than a fourpenny piece, immediately above the connection of the cartilage to the bone, and that there was consequently no difficulty in completely rooting out the disease. I cut through the septum a little way above the lower margin, so as not to interfere with the *columna*, divided the bone with pliers, and separated the remaining cartilaginous attachments. The surfaces of the wound were then brought together, after torsion of the coronary arteries, and retained by stitches of the interrupted and twisted suture. In the course of a few days, there was hardly any perceptible trace of the operation, and the patient has since continued perfectly well.

This case shows how careful we should be before condemning a patient as incurable; it also affords an example of malignant disease in the nasal cavity, originating from a very unusual source; and it proves the advantage of gaining additional freedom of access to the nostril, by dividing the lip, instead of cutting through the *columna*, or slitting open the *ala*, neither of which modes would have afforded so much space, or probably left so little deformity. In a case related in the *Edinburgh Medical and Surgical Journal* for 1834, I laid the nostril open in the last mentioned way, to obtain sufficient room for extracting a large fibrous polypus which projected both externally and into the pharynx, but did not succeed. Afterwards, when the symptoms had become much more urgent, I removed the superior maxillary bone, as the only means of relieving the patient from the disease. The morbid growth for which this severe operation was undertaken, is fortunately of very rare occurrence. It is distinguished by firmness, or tenacity of structure, resembling that of the ligamentous textures, strong and extensive adhesions to the surface of the bones composing the nasal cavity, and tendency to bleed, causing frequent and profuse epistaxis. In 1840, M. Flaubert of Rouen[1] removed the superior maxillary bone, for the detachment of a fibrous polypus, apparently under the impression that this proceeding had no precedent. And in a letter lately received from Professor Mott of New York, I learn

[1] Arch. Gén., August 1840.

that he is about to publish the details of a case in which he successfully cut out the greater part of the superior maxillary bone with the same view.

In all of these cases, the bone was perfectly sound in its substance, and was removed merely to afford room for separating the tumours; they are consequently very different from the ordinary affection of a malignant nature, in which the growth springs from the interstices of the bone, and except in such very peculiar circumstances, as those of the patient whose case has led to these remarks, does not admit of any beneficial operation.

ARTICLE II.—*On the Topical Application of Iodine and its Compounds.* *By* JAMES J. ROSS, M.D., *Surgeon, Cambusmore, Sutherlandshire.*

The experience of the writer in relation to the local uses of iodine, is recorded in the following remarks, which, in many cases, confirm the previous observations of others. No attempts are made at systematic arrangement; the principal preparations and forms of iodine are selected, and their efficacy, as topical agents in various diseases, detailed. We shall commence with the use of iodine itself, taking first its aqueous solution; second, its tincture; and, third, its ointment.

Aqueous Solutions of Iodine.—There is a form of ulcer which we sometimes meet with, on the lower extremities of elderly persons (particularly women), where the whole limb is one hardened, condensed, discoloured mass, as if skin, cellular tissue, and even the muscular texture, were matted together by solid œdema. The ulcer is usually of great superficial extent, but not deep; its surface is hard, pale red, and without the least appearance of granulations; frequently, too, there is hypertrophy of the tibia:—for most of such cases are seen on the anterior and inner surface of the leg. Such ulcers, it is hardly possible to heal; but sometimes we will succeed in diminishing their size greatly by the use of Lugol's stimulating washes (iodin. gr. ij, iij, or iv; iod. potassii, gr. iv, vi, or viij to water ℥i.), especially if we have previously used blisters over the sore, according to the plan of Mr Syme.

Iodine may farther be used as a rubefacient or caustic, according to the formulas given by Lugol. The rubefacient consists of iodin. ʒiv, iod. potassii, ʒi, aquæ, ʒvi; while the caustic solution is formed of iodin. ʒi, iod. potass. ʒi, aquæ, ʒij. From the quantity of the material required for these solutions, it is not likely they will ever come into extensive use, especially as there are other substances, which answer the purpose equally well, if not better.

Tincture of Iodine.—The tincture of iodine admits of far more

extensive application. It consists of iodine ℈ij to alcohol ℥i. We shall proceed to consider some of its uses as a topical agent.

1. Some writers have lauded the local application of the tincture of iodine in erysipelas, as if its use were really a specific for the disease, and rendered all other treatment superfluous. I have used it in several cases, but in any instance of pure phlegmonous erysipelas, I have never seen it equal to the subduction of the disease, however early employed; and I suspect that those who delay the usual treatment by incisions, &c., in order to test its efficacy, will have reason, perhaps when too late, to repent their having done so. In slight erythema it certainly is of advantage,—allaying the burning heat of the part, producing a comfortable feeling, causing subsidence of any swelling from effusion, and hastening the superficial desquamation that commonly takes place; but, as already stated, that it has any power over the morbid action of genuine erysipelas, I cannot testify:—and I should farther be afraid, that those who venture to tamper and trifle with it here, will cause no small injury to their own reputations, and their patients' lives. In one case of œdematous erysipelas, however, in an old cachectic subject, I used the tincture of iodine locally, with the most marked advantage, together with regular bandaging. The limb daily diminished in size, the uneasy feeling of distension was soon relieved, and in a short time a perfect cure followed—constitutional treatment being, of course, pursued at the same time.

The mode of applying the remedy is to brush it freely, by means of a camel's-hair pencil, over the affected surface every day, till it become of a dark brown colour, and some smarting heat be experienced by the patient. It very rapidly dries, and nothing farther is required. It is succeeded by rather a pleasant feeling of warmth, which lasts for some time, and desquamation of the cuticle takes place in a day or two. If used too strong in proportion to the delicacy of the patient's skin, small vesications may be produced, which prove disagreeable, but are of no farther consequence.

2. Common or non-specific ulcers sometimes assume an obstinate character, which resists the ordinary means of bringing on healthy healing action. This may arise in some cases, from peculiarity of constitution, in others, from the situation of the sore, in others, from the exciting cause. Thus, when in consequence of a blow, sloughing has taken place in a limited portion of a bruised surface, the resulting ulcer is often remarkably difficult to heal; large flabby granulations arise, which we often fail in exciting to contraction by the ordinary stimulating washes or ointments. Now, in these cases, the tincture of iodine will often be of service, brushed over the whole sore, and for an inch or two all round it, every day; after its application, the surface may be covered with dry lint. Scurfy scales, like desquamations, form round the circumference of the sore, and when these separate and

peel off, the parts beneath are found healed. In one remarkably obstinate ulcer, over the internal malleolus of a healthy boy, (caused by the part being struck by the fragments of a small cannon, which burst while being fired in celebration of the new year,) after its resisting for weeks all the routine of lotions and ointments, with rest, strapping, and bandaging, I had recourse to the iodine in the manner just stated. In a fortnight it had contracted from the size of a crown piece to less than that of a shilling; and this remaining portion healed kindly under simple dressing, and an occasional touch of sulphate of copper. There was no surrounding callous hardness, or "stool," in the case of this ulcer; so that the iodine must have acted directly on the sore itself, and not indirectly by removing condensation, and so allowing the granulations to contract. Perhaps the reason of the obstinacy and weakness of this ulcer was, that, by the contusion caused by the pieces of cannon striking the part, its vital actions were so reduced, that they were unable to set up healthy action.

3. Another case, in which the local use of the tincture of iodine is of signal efficacy, is that of ulcers of the tonsils and fauces—specific or non-specific. I have seen the ugliest sores in this situation put on quite a healthy appearance in a few days under its use. It is highly recommended by Ricord, and certainly I do not know any thing equal to it in such cases. It is best used in the form of gargle; thus,

R. Tinct. iodin. ʒi—ij.
Tinct. opii. ʒi.
Aquæ, ʒvj. ɱ.
Fiat. Garg. ter quaterve in dies utenda.

It may be made weaker or stronger, with or without the laudanum. It requires to be well shaken when used.

The first case in which I used it, was one of irregular phagedenic ulceration near the base of the uvula, with patches of a white exudation on the back of the pharynx; the voice, respiration, and deglutition being all affected. The general aspect of the patient was cachectic, but he denied ever having had syphilis. The above gargle was ordered. An improvement was observable on the third day of its use, which went on steadily and rapidly to a perfect cure. In another bad case of syphilis, with sloughing irregular ulcers on the velum and fauces, the local use of the same gargle (made first with ʒi to ʒvj and afterwards increased to ʒiss,) arrested the phagedenic ulceration, and reduced it to a healing sore, which soon cicatrised. Patients do not complain of the gargle being disagreeable.

I may farther mention a case of perforating ulcer of the palate, in which the undiluted tincture of iodine was used as an accessory remedial agent with good effect. The patient was a girl, aged 22; the opening was of the size of a goose quill, in the soft palate, a little to the left of the mesial line, just behind the edge

of the osseous palatal arch; no bone could be detected by the probe; her speech was considerably affected, and a portion of every thing she attempted to swallow escaped by the nose. There was no reason to suspect any syphilitic affection. On the 19th March the opening was touched with a red hot wire; on the 23d the eschar came away, and the raw surface was now touched every second day with tincture of iodine. By the 13th April the opening had become much less; she spoke better and could also swallow better; very little escaping by the nose, and that only of any thin liquid, such as water. The cautery was re-applied; on the 16th April the tincture of iodine was resumed as before; on the 25th the opening had still farther diminished, and on the 13th May it was closed so that nothing came through it; the powers of speech and deglutition being also quite restored. In this case, after a raw surface had been produced by the separation of the eschar, consequent upon the application of the cautery, the tincture of iodine seemed powerfully to excite the granulating or reparative action. It might also, perhaps, be used in a similar manner in fistulous openings in other situations.

4. The tincture of iodine has farther been used by pencilling, in various swellings, such as enlarged glands, buboes, nodes, &c. I have repeatedly, for a length of time, pencilled the skin over small indolent strumous glands in the neck, but I cannot say that ever I was sensible of any advantage from so doing. In chronic bubo, however, the same remedy, by producing a series of cuticular desquamations, has appeared to some to promote the resolution of the gland.[1] In similar cases Ricord uses compresses soaked in a dilute tincture of iodine, (Tinct. iodin. ℥i; Aq. distill. ℥ij,) which Mr Langston Parker says "are very useful in the resolution of the chronic or indolent bubo."

There is a plan of treatment in cases where the centre of a large mass of indurated swollen glands suppurates, which I have often found very successful since I first saw it practised by Dr Nicol of Inverness. A small lancet puncture is made in the central abscess, so as to discharge the contained matter; this opening is kept patent by the occasional introduction of a pointed piece of lunar caustic, and the whole surface of the surrounding hardened mass pencilled freely every day with the tincture of iodine.

5. With regard to the superiority of the tincture of iodine as an injection in hydrocele, over most others, nothing need be said, as I believe it is now universally used, and its efficacy testified on all hands. For this purpose ℥ij may be added to ℥vj of lukewarm water; the mixture should be made just at the time of using it.[2]

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[1] Johnson's Medico-Chirurg. Review, January 1840, p. 160.

[2] B. Cooper in Prov. Med. and Surg. Journ., Jan. 30, and Feb. 5, 1841.

6. Among the local uses of iodine, we may refer to its inhalation in phthisis, and some forms of chronic bronchitis. I have not myself seen much of its application in this way; but having once witnessed fearful bronchial irritation from its use, I should not be disposed to have recourse to it again; indeed, notwithstanding the encomiums of its authors, its success cannot be very great, "else they would have more followers, and we would hear more of the results."

7. The next instance we shall bring forward of the external use of tincture of iodine is in porrigo, or, more generally speaking, ringworm of the scalp, comprising all those affections, described as tinea, porrigo, eczema, impetigo, &c. The diagnosis of these various forms (which run one into another) is often exceedingly doubtful, and, what is of more consequence, their cure is often difficult, and frequently exhausts the patience both of patient and surgeon. Hundreds of applications have been used in the treatment of ringworm, and their very number proclaims their inefficiency; while in many cases, there can be no doubt, that the cure ultimately effected, ought rather to be referred to the natural dying-out, as it were, of the disease in course of time, than to the particular remedy in use at the moment. In such circumstances, then, we are all much indebted to Dr Graves, who has laid down certainly the most successful plan of treatment I have yet had an opportunity of trying. He recommends as a precautionary measure, that, if the disease has been of long standing, an issue should be inserted in the arm, before attempting its cure. He condemns shaving the head, for it adds to the irritation of the skin, and the scalp can be sufficiently exposed by cutting the hair as closely as possible, with a sharp scissors. The next object is to remove the concreted scales, which lie over and conceal the diseased skin: this is to be accomplished by diligent ablution, without using any irritating degree of friction. We must next have recourse to some application, which will destroy the morbid secreting surface, or those vegetable fungi, which, according to some late observers, constitute the true pathology of the disease. For this purpose, Dr Graves recommends either the tincture of iodine, or a solution of lunar caustic, or blue stone, 10, 15, or 20 grains to the ounce, as the case may require. Since reading Dr Graves' paper,[1] I have in several instances used the tincture of iodine, and have since been far more successful than before. "As to the application of this solution, or the tincture," continues Dr G., "it will not do to apply it, as is generally done, with a camel's hair brush *for it must be strongly rubbed into each spot*, for which purpose a small bit of sponge, covered with fine linen, and tied to the end of a quill or slender stick, should be employed. When a large portion of the

[1] Dublin Journal of Medical Science, November 1840.

scalp is affected, it will require some perseverance to apply the lotion (or tincture) in an effectual manner. An application of this nature, when effectually done, must not be repeated oftener than once a-week. Immediately after it, the scalp must be covered with a spermaceti dressing, and the spermaceti must be renewed at least four times daily, so as to keep the head constantly moistened with it. The head is not to be washed for three days after the application of the caustic, or the tincture of iodine, but then it may be well, but very gently, washed with yellow soap and water twice a-day; taking care to cover, as before, with a spermaceti dressing after each washing." The Doctor adds, "when the above precautions have been taken, the cure will advance rapidly, and each succeeding application of the caustic solution, or of the tincture, may be less severe." I have been thus particular in transcribing Dr Graves's directions, as there is no disease more troublesome to the practitioner, and as, from experience, I can bear testimony to the efficacy of his mode of treatment, as above explained. The surgeon, when applying the iodine or caustic, should have his hands protected by gloves.

8. Another case, in which the local use of the tincture of iodine is very serviceable, is that of fluid effusion in joints. It is astonishing how rapidly it will sometimes cause hydrops articuli to disappear from the knee. Some have recourse to it in such cases at once, while symptoms of acute inflammation are still present; but, as a general rule, it will be advisable first to subdue these by the usual means; and then the tincture should be freely brushed over the whole surface of the joint every day. Its application should be preceded by friction with a flannel cloth, and after the tincture dries, a bandage may be applied, so as to make gentle pressure. I have seen Mr Lizars use it in the same way, with excellent effect, in dispersing copious effusion in the knee-joint, consequent on fracture of the patella.

Iodine Ointment.—The ointment of iodine itself is seldom used; and any remarks upon it will come better under the head of the hydriodate of potassa. I will only mention here, that a weak form of it is often of great use in removing bursal effusions or ganglionic swellings, applied as a dressing to the cutaneous surface, previously rendered raw by a blister. The common strength of the ointment is ℈i to ʒi of axunge.

Such are all the remarks we have to make on the topical application of iodine in its elementary form. We shall next proceed to the iodide of potassium, or hydriodate of potassa.

Iodide of Potassium.—It will be seen above, that this salt enters into the composition of the aqueous solutions of iodine; indeed, it is necessary to keep the iodine in solution, as it is very insoluble in water. But the most common form for its external use is that of ointment; and one of the best formulæ for this

purpose is the officinal one in the last Ed. Ph., viz. iodine ʒj, iodide of potassium ʒij, lard ʒiv. I would here remark as to all ointments of hydriodate of potassa, that, as often procured from apothecaries, they are unfit for use, from their containing a quantity of gritty particles of the salt: therefore the recommendation of the London College seems important, which orders the iodide to be first triturated with a little spirit, before adding the lard. Care should be taken, too, that the lard be fresh. When the iodide of potassium is used alone, the ointment may vary in strength from ʒss to ʒiss, to ʒi of axunge.

1. The ointment has been very extensively used in cases of enlarged strumous glands. A portion is rubbed over the skin of the part every morning and evening, for ten or fifteen minutes each time. The strength of the ointment, and the degree of friction, must be regulated by the circumstances of each case. Where there is redness of skin, or much tenderness to the touch, it should never be employed; and if, during its use, these should appear, it must be intermitted, till, by warm fomentations and soothing measures, they be overcome. Cases of such diseased glands are common enough, and trials of its efficacy are therefore easily made by all. Some have lauded it to the skies, while by others it has been unjustly depreciated. It is probable, that as usual, truth lies "in mediis rebus." That it has some power in exciting absorption of hardened glandular masses—that it will, as it were, dissolve large condensed tumours of this kind, and break them up into separate nuclei—cannot be denied: but its power of completely dispersing these nuclei, I am not disposed to estimate very highly. I have almost invariably been disappointed with its effects over the enlarged glands of strumous patients; and I cannot help believing, that much more of the result, when this has been favourable, is to be attributed to the iodic preparations, which are generally exhibited by the mouth at the same time, than to the local medication by the ointment in question. I am well aware that this opinion is contrary to that of many others; still many will coincide with it; and, at any rate, I give it as the result of my own experience.

2. The ointment of hydriodate of potassa has been used to excite the absorption of all kinds of tumours. It is an excellent application to those chronic indurations which remain after any local attack of inflammation, and that thickening of parts which is left after the healing of an abscess. It may be serviceable in hernia humoralis, but perhaps not so much so, as the camphorated mercurial ointment. In the case of those tumours which are usually subjected to the knife, little can be expected from it, though its use, with occasional leeching, may be first employed. This mode of treatment will sometimes cause the disappearance

of those small, moveable, painless tumours, which are often seen in the mammæ of young females. In tumours of internal organs, as the liver, ovary, &c., the Edinburgh ointment is one of the best means of local treatment we have, alternated with leeching and blistering. In one case of enormously enlarged spleen, occurring in a boy aged 5½ years, the hyd. potass. ointment was of signal efficacy in reducing its size; but abdominal effusion took place, and the patient sank. However, by external examination, it could be discovered that the spleen, which had at first nearly filled the left side of the abdomen, extending from below the ribs forwards to the mesial line, backwards to the lumbar region, and downwards to the iliac region, had become so diminished, that ultimately, at the period of death, it felt no larger than a doubled fist. Internal treatment was of course resorted to at the same time; but the reduction of size became much more marked, and proceeded much more rapidly, subsequent to commencing the ointment.

The same application may be also used in ovarian disease, in conjunction with other means; but I cannot testify to its efficacy, as such cases too often defy all our remedial agents.

3. The iodide of potassium has been used externally in almost all cutaneous diseases. From some experiments lately made with regard to its destructive power over the itch insect, it has been recommended for the cure of scabies. M. Schedel[1] states, that the speediest cure of this complaint is effected by an ointment containing ʒss to ʒi of axunge.

Dr A. T. Thomson recommends an ointment composed of hyd. potass. ʒiss, to axunge ℥iss, with tinct. opii ʒi, in lepra: this, conjoined with appropriate internal treatment, has a very good effect; but, from a comparative trial, I think it inferior to another ointment recommended by the same author, viz.,

R. calomelanos ʒi, unguent. picis ʒiv, unguent. cetacei ℥i. ℳ.

Either of these cannot, of course, be held up as capable of curing lepra; but, from cases treated with and without their aid, I think that they decidedly hasten that desirable result.

I have tried the ointment of this same substance often in porrigo, but cannot report favourably of its effects; at all events, it by no means equals Dr Graves' treatment by the tincture of iodine, already detailed.

We shall next take up the iodide of sulphur.

Iodide of Sulphur.—1. This substance has been much vaunted of late for the cure of porrigo. Dr W. J. Erasmus Wilson recommends the head in such cases, after ablution with warm water, to be rubbed gently, twice a-day, with the following:—R. iodid. sulph. ʒss, ol. olivar. ʒi.[2] This salt is also recommend-

[1] Lib. of Prac. Med.

[2] Lancet, Feb. 22, 1840.

ed by a reviewer in *Johnson's Journal* (Jan. 1839, p. 156), as beneficial, particularly in porrigo decalvans, made into an ointment with 18 or 20 parts of lard, and rubbed on very gently night and morning. Dr Davidson of Glasgow has also made a report of his experience with regard to it in a late number of this Journal. He uses it from ℈i to ℈ii, to ʒi of lard, applied generally once, in some cases twice a-day, after shaving the head. He states it to be the most efficacious of all the external remedies he has tried. A writer in *Johnson's Review* for Jan. 1842, p. 268, noticing Dr Davidson's report, also testifies to its merits, from his own observation for the last two or three years; he uses a much stronger ointment, ʒi of the iodide to ʒvii of lard, and has found it, on the whole, more serviceable than any other application. I have used an ointment of it, ℈i to ʒi in a few cases, as well as Dr Wilson's oily formula, but not with the good effects represented above. However, my experience of it has been limited, as just stated, to a few cases, and, therefore, I have no data on which to found an opinion of its efficacy; and farther, since I became aware of Dr Graves' treatment by the tincture of iodine, I have seldom had occasion to have recourse to any other.

2. Dr Davidson, in the same report, states his experience of its use in lepra and psoriasis. "The iodide of sulphur," he says, "does not seem to have so much power over lepra and psoriasis as over porrigo, although, in his experience, it has succeeded more frequently than any other agent he has tried, with the exception of blistering by cantharides."

3. I used the iodide of sulphur very successfully in a bad case of sycosis menti. After soothing the irritation by extracting the hairs from the pustules, by poultices, prussic acid lotions, and warm poppy-head fomentations, an ointment of gr. xv to the ounce was used by gentle friction morning and evening. In ten days the tuberculated indurations covering the chin were much smaller, and ultimately a complete cure was effected.

Iodide of Mercury.—1. An ointment of iodid. hydrarg. ℈i to ʒiss of lard is extremely serviceable in various syphilitic ulcers, particularly those indolent greyish regular sores, which are seen on the arms and legs of venereal patients, and those which are left on the separation of the concreted scurvy cutaneous tubercles, which are met with on the face in bad cases. The above ointment is one of the most effectual applications for such sores that I have seen used. It is applied in the usual manner,—spread on lint.

2. An ointment of this substance may be used, like the other preparations of iodine, with the view of causing the absorption of various tumours. Ricord uses it in this way for chronic indolent bubo.

Iodide of Lead.—An ointment of this salt—3i to ℥i of axunge—may sometimes be of service in various strumous sores. It has also been used by friction against different tumours, and to excite absorption generally. But I am unable to say anything of its efficacy from personal observation.

Iodide of Zinc.—The first notice I saw of the medicinal use of this compound was in the review of Dr Cogswell's Essay on Iodine, in *Johnson's Journal* (Jan. 1839, p. 118.) It is there stated, "During the last two years we have been in the habit of employing a strong solution of the iodide of zinc, as an application to the tonsillary glands, when affected with chronic enlargement, and we can recommend it to our readers as the best local remedy we know for that most obstinate complaint." To this statement I fully subscribe. In those cases of hypertrophied tonsils where I have used it, the diminution in their size was most marked and speedily produced. In two patients in whom these glands were so much enlarged as almost to fill up the isthmus of the fauces, and interfere materially with deglutition, they were quickly reduced to nearly their natural size, and gave no farther inconvenience. A solution may be made of 10, 15, or 30 grains to the ounce of water, and applied to the tonsils daily, by a piece of spunge tied to a quill or thin piece of wood. After using this for some time, I employ the substance itself, undiluted; a little of it is exposed to the air till it deliquesces, and then applied in this state to the tonsil, by means of a camels-hair brush. This is a much more effectual plan than Dr Cusack's mode of applying the nit. argenti point by point; indeed, it is superior to every local application I know of being used in such cases, always, of course, excepting the knife.

The last preparation of iodine which we mean to notice is one very little known—the iodide of arsenic.

Iodide of Arsenic.—The first time I had an opportunity of seeing this substance used as a local application, was in a case of lupus, extensively affecting the nose and upper lip. It was ordered by Dr J. J. Nicol of Inverness, and with excellent effect. Three grains were made into an ointment with ℥i of lard, and a portion applied daily to the sore, spread on lint. The surface soon became of a dark iron-grey colour; in fact, sloughed and formed an eschar. When this slough came away, it left below a healthy sore, which soon healed under the black wash. During the progress of the case, one or two spots showed signs of progressive ulceration, but by a timely application of the same ointment, their action was changed in the same way, and at last the whole affected surface cicatrized.

2. Another instance where this ointment is of very great importance, as an escharotic, is in the case of thickened spongy softened bone, where an ulcer exists over the diseased part, and

covers it with large vascular granulations, which, in such cases, grow very rapidly. Now here it is often an object to remove these granulations, in order to treat the affection of the bone; but as the patients are usually scrofulous, debilitated, young subjects, the loss of blood attending shaving off these by the knife cannot well be borne, and cannot fail of being injurious both to the local action of the part affected, and to the general energies of the constitution. By the use of the ointment of iodide of arsenic (gr. iij to 3i), their removal may be thoroughly and safely effected. It is applied like common dressing, twice a-day, till the surface become dark-coloured and dry; a thick cake is formed, which begins to rise all round the edge; when this takes place, poultices may be applied till the whole slough is thrown off, or the loosened and raised portions of its circumference may be clipped off with scissors. The ointment gives no pain, and its action extends pretty deep. If the first slough does not expose the bone, a new application must be made.

3. I have no doubt that a weaker ointment might be used as a stimulant in ordinary ulcers. No fears need be entertained from any idea of the arsenic being absorbed.

ARTICLE III.—*Two Cases of Apoplexy, attended with unusual lesions. By* JOHN ADAMSON, Esq., *Surgeon, St Andrews.*

CASE 1. The patient was a man aged 36, of robust constitution, but of dissipated habits. According to the statement of his wife he came home very drunk about 12 at night, Jan. 17, 1838; and, as was his habit on similar occasions, he refused to go to bed, but sat down in a chair with his head leaning on his knees, and fell into a profound sleep. Early in the morning, viz. 4 A.M., she noticed that he did not breathe, and on examination he was found still sitting in his original posture, but quite dead.

Dissection.—On removing the skull-cap, a clot of blood, apparently about two or three ounces, was found lying on the left hemisphere of the brain, under the dura mater. In connexion with its lower edge there was a small ragged opening into the left lateral sinus, in that portion which lies on the inferior angle of the parietal bone, from which the blood appeared to have escaped. On examining the sinus at this part, it was found to exhibit a congenital imperfection of its dura-matral covering, which, on the cerebral side, consisted merely of a few bands crossing the thinner internal coat, thus leaving the intervening portions unprotected and weak, compared with the ordinary state of this vessel; it was in one of these portions where the rupture had occurred.

Case 2. A gentleman, aged 60, had been liable for some months to attacks of headache and giddiness, without other complaints. On Monday, Nov. 14, 1841, he experienced a sudden recurrence of these symptoms while on his way to church, which caused him to stagger a little on the street, but did not prevent him from going on, as he recovered in a few minutes. During the service he was noticed to be insensible, though still sitting upright in his pew, and he was immediately carried out to the open air. Here he again recovered so far as to imagine that he had only had a fainting fit, and that there was not much the matter. In the evening his pulse was feeble and rapid, he hesitated a little in his speech, and complained of a feeling of numbness and weakness over his whole body; these symptoms continued with little increase until the night of the 16th, when they were suddenly much aggravated. He now presented a remarkable appearance; his limbs lay perfectly powerless and motionless, his jaw had fallen, leaving his mouth wide open, his tongue was retracted and immoveable, his breathing highly stertorous and intermitting; yet he retained his intelligence, with the senses of sight and hearing. This was discovered after a time by the expressions and motions of his eyes, and on being asked to make affirmation by winking, he in this manner readily answered all the questions which were put to him. The only motions he was observed to make after this time, except of the eyes, eyelids, eyebrows, and in respiration, were a slight jerk of the right arm when it was pricked with a lancet, and several yawns after eight or ten ounces of blood had flowed from the vein. He continued in the above-described state about twenty-four hours, when his eyes gradually became dim and fixed, his breathing becoming more and more interrupted, and his pulse, which had been throughout weak, and beating from 100 to 120 times in a minute, more feeble and rapid; he died on the 18th at 9 P.M.

Dissection.—The body was examined on the 21st in presence of Dr Mudie, Dr John Reid, &c. It was rather corpulent; the organs of the abdomen and thorax were healthy; the vessels on the surface of the brain were full of blood, the arachnoid slightly thickened on the anterior lobes; the convolutions of anterior lobes were slightly atrophied; there was slight effusion of serum under the arachnoid between the atrophied convolutions; the substance of the brain was normal,—red spots were perhaps rather more numerous than usual; about two drachms of liquid were found in the lateral ventricles; the substance of the cerebellum was perfectly normal; the parts at the base of the brain were of the usual appearance in every part, except the basilar and right vertebral arteries, which were not collapsed, but appeared like round firm cords. When removed from the brain and cut open, the basilar artery was seen to be obstructed in its whole length,

and the right vertebral to the extent of nearly an inch. The internal membrane of the basilar was much ruptured and corrugated, but the obstruction was chiefly caused by a very firm clot of blood lying under the internal coat on one side, thus pushing it forward so as to fill up the vessel. The blood appeared to have penetrated backwards, *i. e.* from the carotids to the vertebrals, as the right vertebral was obstructed solely by the separation of its coats, as above described, without any rupture.

Remarks on Case 2.—The more remarkable phenomena of this case are, the apparent integrity of the functions of the cerebrum, and of at least two of the nerves of special sensation, while common sensation was cut off from probably the whole body, and volition only remained connected with so small a portion of it, as the muscles necessary for the observed motions of the eyeball and eyelids. These phenomena seem to be fairly enough attributable to the arrestment of the flow of blood in the arteries of the cerebellum, tuber annulare, and portion of the medulla oblongata, consequent on the sudden obstruction of the basilar and right vertebral arteries.

ARTICLE IV.—*On the Occurrence of a Peculiar Animal Matter in the Urine during Pregnancy.* *By* JAMES STARK, M.D. F.R.S.E.

In replying to Dr Griffith's conclusions[1] as to what I described as a peculiar animal matter in the urine of the pregnant female being nothing else than lithate of ammonia, I beg it to be distinctly understood, that my object is not to prove him wrong, but to attempt to arrive at the truth; and it does appear to me, that the very partial and distorted view of the question which he has taken, backed though it be by Dr Golding Bird, is not the best fitted for attaining that object. It is with the utmost reluctance I reply to that attack, and should certainly never have done so, but have allowed the criticisms to fall to their own level, had the paper not come out under the sanction of Dr Golding Bird, who is considered an authority on this subject.

I do not purpose to enter at large into the very partial chemical details which Dr Griffith has selected to prove that what I described as an animal matter was lithate of ammonia. Any one conversant with animal chemistry, who reads attentively the minute details given in my paper in the *Edinburgh Medical and Surgical Journal*, will be perfectly satisfied, that though in some features it may resemble that animalized salt, in others it widely

[1] MONTHLY JOURNAL, July 1842.

differs. A clear solution of lithate of ammonia has its lithic acid thrown down as a precipitate on the addition of an acid. The clear urine of the pregnant female, which, according to Dr Griffith, and Dr Bird's view, ought to consist of a saturated solution of lithate of ammonia, notwithstanding all their theories, most pertinaciously remains clear, though nitric, muriatic, sulphuric, or acetic acids be added; and yet, if their theories were correct, we should have a copious crystalline deposit of lithic or uric acid. This single fact, therefore, is sufficient to overturn all their fine-spun theories regarding the saline nature of the matter in question, and ought to be a warning to them in future to examine every question in all its bearings before arriving at any conclusion. If this animal matter possesses a few properties common to it and to lithate of ammonia, it is no more than is done by every other animal substance. Potash dissolves albumen and fibrin, so that they may be boiled without any precipitate being occasioned, and the subsequent addition of sulphuric acid causes what Dr Griffith would likely call an amorphous deposit to take place. In so far it resembles lithate of ammonia. But who, from such an experiment, would infer that it was lithate of ammonia? Not one; and yet it is from the partial application of a few tests perfectly analogous that Dr Griffith draws the conclusion, that what I describe as the peculiar animal matter in the urine of the pregnant female, is nothing else than the lithate of ammonia. Leaving, therefore, his criticisms to rest on their own merits, I shall proceed to point out the animal nature of the peculiar matter met with in the urine of the pregnant female, the excess of which, above what the urine can hold in solution, is deposited as a copious sediment during the earlier months, along with a few of the natural salts of that compound fluid.

1. It is the deposit or sediment which naturally subsides, which afterwards rises to the surface, and forms the pellicle of animal matter to which the term *kiestein* has been applied. Every writer who has described the minutiæ of the process by which this pellicle is formed (aye, even Dr G. Bird himself) agrees in this, so that there can be no doubt of the fact. The chief portion, therefore, of the natural deposit must be as much an animal matter, as it is allowed by all to be when it rises to the surface, and forms the animal pellicle of kiestein. If this natural sediment, therefore, be lithate of ammonia, we should have the very strange and irrational circumstance to account for, of a lithate of ammonia, which is of greater specific gravity than urine, becoming lighter by remaining immersed in that fluid, rising therefore to the surface, and forming there an animal pellicle, which Dr Golding Bird asserts is caseum, and owes several of its physical characters to the presence of earthy phosphates! Such a conclusion, however absurd, is inevitable from Dr Griffith's and his friend Dr Bird's state-

ments. Reason, therefore, leads to the belief, that the natural sediment is chiefly composed of animal matter. The pellicle, however, is not formed solely from the deposited animal matter. A large quantity remains dissolved in the urine, and, as the peculiar changes go on, which give rise to the separation of the animal matter, it also separates as a turbid flock, or suspended precipitate, and then rises, and, in conjunction with what had been deposited, assists in forming the animal pellicle of kiestein.

2. If this animal deposit, or the urine containing the animal matter in solution, be boiled for a considerable time, a flakey deposit frequently, but not always, takes place, and on minutely examining this, it is found to present many of the characteristics of albumen,—none, certainly, either of lithate of ammonia or of lithic acid. It is not a little singular, that Dr Bird himself, in the last Number of *Guy's Hospital Reports*, in a paper on urinary concretions, actually also notices this fact, relative to what he calls urate of ammonia, and, stranger still, arrives at the conclusion, that his urate had been converted into "*incipient albumen*." From such a fact I would draw a very different conclusion, viz. that chemists had often mistaken this animal substance for lithate or urate of ammonia, because chemical agents easily decomposed it, and produced, as a consequence of that decomposition, the uric acid. This view is strongly supported by the acknowledged fact of all saline bodies constantly assuming the crystalline form; whereas, what they describe as lithate of ammonia, is commonly stated to consist of "an amorphous deposit." Besides, a cold saturated solution of lithate of ammonia, produced by the direct action of ammonia on uric acid, gives a copious precipitate of lithic acid on the addition of an acid. What they describe as lithate of ammonia in many cases, nay, almost always, gives none, though the urine be saturated with it. This, therefore, also proves they have mistaken an animal matter possessing peculiar properties, but which is easily decomposed by chemical agents, for urate of ammonia, and Dr Golding Bird, in the paper to which I have alluded, seems to have fallen into this very error, for he distinctly states in his table that urine saturated with the urate of ammonia, is not affected by acids.

3. Dr Griffith accuses me of having made the very ignorant blunder of mistaking globules, as he terms them, of mucus, and epithelial scales, for the globules or granules of gravidine, the peculiar animal matter of the urine during pregnancy. Had he been at all an adept at the use of the instrument he so often calls into requisition, he would have discovered that the globules to which I allude are so infinitely more minute than mucus corpuscles or epithelial scales as to be quite invisible to the magnifying power which could render the others distinct; and

had he examined the filtered urine, he would have found the globules I describe as abundant in it after as before the filtration. I usually filtered the urine as soon as possible after procuring it, in order to remove both the mucus and the epithelial scales, both of which a filter retains; but I scarcely ever met with a case where even the finest filtering paper would retain the globules I describe, unless they were agglomerated together in masses, as they usually are more or less in the natural sediments. When floating free, however, as they are when the urine is heated so as to dissolve the sediment, or are as they exist in the clear urine, from which the sediment has subsided, no filter retains them, nay, even a great portion of the sediment itself passes through filtering paper. Solution of gelatine, albumen as it occurs in the serum, and fluid fibrine, though equally (as this animal matter,) composed of extremely minute globules or granules, also pass through filtering paper without leaving one of these granules or globules behind. Before Dr Griffith, therefore, accused me of such ignorance as to mistake mucus corpuscles for globules or granules of gravidine, he ought to have looked for the globules I described, (granules and molecules of others,) and compared them with those of caseum, gelatine, fibrine, and albumen, both in their fluid and solid states, (in the last of which they are particularly distinct,) seeing that I stated that the ultimate particles of all these animal substances presented the same size, form, and general appearance. I stated that these minute globules, or molecules, arranged themselves in various irregular agglomerations, and frequently in rounded masses, in which state they could scarcely be recognised to differ either in structure or form from the pus corpuscle. This was especially the case in the natural sediment, and the exact same microscopic appearance may be exhibited in albuminous urine, or in serum itself, by precipitating the animal matter of the albumen by means of a weak acid, added in such quantity only as shall neutralise the free alkali which holds the albumen in solution. Microscopically speaking, the rounded or globular aggregation of the ultimate globules or granules of gravidine cannot be distinguished from those of albumen; nor these two from the pus corpuscle,—all are equally formed of aggregations of extremely minute particles of equal size. The globules of gravidine are, therefore, neither mucus corpuscles nor epithelial scales, neither are they saline particles. They are animal matter, possessing the same microscopic characters as the ultimate molecules, globules, or granules of the other known animal matters; and in the plate accompanying my paper in the *Edinburgh Medical and Surgical Journal*, I figured some of these as a means of comparison. I thought this was the more required, as extremely few observers had succeeded in detecting the ultimate globules or gra-

nules of these animal matters, and many had denied their very existence.

4. The fact of the chief portion of the natural sediment being composed of granules, (globules as I term them,) *and these granules being animal matter*, is quite set at rest by a minute microscopic examination of the very same matter when it has risen to the surface, and formed the kiestein pellicle. The very same minute globules, which were seen to form the natural sediment, are seen to constitute the entire substance of the animal pellicle, apparently unchanged in size, form, lustre, or general appearance. They are seen in it in all sorts of agglomerations; forming rounded or irregular masses of various sizes, from the size of small pus corpuscles, to bodies of three or four times the size. If former investigators into the nature of this peculiar pellicle failed to detect its minute composition, it only shows their want of observation, their unfitness for pursuing minute microscopic investigations, or the imperfection of the instruments they employed; not that such a structure was not present.

5. When the flakes resembling albumen, obtained from the urine or its sediment when long boiled, are subjected to microscopic examination, they are found to consist of the same minute globular granules described above, but agglomerated together into very irregular masses; in fact, this substance does not differ in its microscopic characters from flakes of coagulated albumen.

6. When a *salt* is dissolved in water, perfect solution is effected, so that the highest powers of the microscope cannot recognise its presence in the fluid, and as the fluid cools the salt assumes the crystalline arrangement. The globules of gravidine, however, possess this property, in common with all the other animal matters, that, when apparently dissolved, the size, form, or general character of its particles *are not changed:* like the other animal matters these molecules are merely held in suspension in the fluid, and are rendered so transparent, and their refraction so equal to that of the fluid in which they float, as to be with difficulty distinguished even by a good microscope. They may, however, like those of other animal matters, be instantly brought into vision by using any agent which will render the globules more opaque without acting on them so as to decompose them, when they are seen unchanged in any respect. This circumstance, therefore, proves that it is not a salt but an animal matter which is met with in the urine of the pregnant female.

7. Dr Griffith's remarks on the action of ether on the gravidine seem quite unworthy of an inquirer after truth. Ether will not remove a salt from its solution in water,—ether will not remove from water and hold in suspension saline particles which are heavier than that water. No; not though Dr Griffith

assert that it will. The matter, therefore, which the ether removed both from the natural sediment suspended in water, and from the clear urine freed from its sediment, could not be a salt.

When the *natural sediment* suspended in water is agitated with an equal volume of ether, a mucilaginous-looking fluid rises to the surface of the watery fluid, remaining, however, covered by the free and pure ether. If, without being interfered with, the ether be allowed to evaporate spontaneously, this mucilaginous-looking fluid concretes into a pellicle which cannot be distinguished microscopically from the animal pellicle of kiestein, or the albuminous-looking deposit which forms when urine containing this sedimentary matter is long boiled. It is seen to be composed entirely of irregular agglomerations of the minute granules or globules above described. When the *clear urine*, which has deposited its sediment, is agitated with an equal volume of ether, a precisely similar mucilaginous-looking thick fluid is removed, which in nothing can be recognised to differ from that removed from the natural sediment. Both of these, according to Dr Griffith, consist of lithate of ammonia; but the last of these facts proves of itself that it is not a *salt* which the ether has thus removed. I need scarcely mention that it is a known fact in chemistry, that if a salt be soluble in one fluid and not in another, the fluid in which it is *not soluble* will never remove it from the fluid in which it is. Apply this to the above case,—lithate of ammonia is soluble in water—it is not so in ether. Ether, therefore, could never remove it from its solution in water, because the affinity of the salt for the water is much greater than that of the ether for it, for in fact the ether has no affinity for it at all. It cannot, therefore, be a salt which the ether has removed, but must be some other substance; and I shall now proceed to show that it is an animal substance, and not a salt which the ether thus removed.

Ether possesses this peculiar property, that it removes animal matters from all neutral or nearly neutral fluids, as a thick mucilaginous-looking fluid, of precisely the same appearance as that removed by its means from the clear urine of the pregnant female and its natural sediment. Any one may satisfy himself of this fact, by agitating albuminous urine, or serum diluted with urine or water, with an equal volume of ether, when they will see the phenomena described above; and they may satisfy themselves of its being really the animal matter they have thus procured, by heating it, when it assumes the solid form. The same is true of gelatine, caseum, and fibrine in solution, relative to the action of ether. When these ethereal solutions of animal matter are examined by the microscope, they are seen to be entirely composed of extremely minute globular granules of equal size,—what is more astonishing, of the exact same size, whether they come from gravidine, caseum, gela-

tine, fibrine, or albumen, and not to be distinguished from each other. In drying on the glass they agglomerate into the same irregular and regular shaped bodies, so as in many cases to form globular-shaped agglomerations of the size and form of the pus and mucus corpuscles. The ether, in removing these animal matters, does not change their condition,—albumen still remains as such, and so of the rest; and it possesses this very great advantage, that it renders the ultimate globules or molecules of these animal matters extremely distinct,—a matter of no small importance when they have to be compared with the ultimate molecules of gravidine, and with one another. As no difference, therefore, can be recognised between the action of ether on this matter in the natural sediment, and in the clear urine of the pregnant female, and that of the animal matters of albumen, fibrine, caseum, and gelatine; and as their microscopic characters are perfectly analogous—the only conclusion which it seems possible to draw is, that the matter so removed from the sediment, and from the clear urine of the pregnant female, is an animal matter.

This conclusion is proved to be correct by the action of ether on the animal pellicle of keistein itself. Nobody doubts it to be of an animal nature; and yet, when suspended in water, and agitated with an equal volume of ether, it is removed from that water as a mucilaginous layer, not to be distinguished from that similarly removed from the sediment, and from the clear urine, and possesses the very same microscopic characters.

The animal nature of the deposit seems, then, to be proved as fully as it is possible to prove any such point. It is seen to rise to the surface, and form there an animal pellicle; when boiled, it frequently coagulates into an animal substance resembling coagulated albumen; it is similarly acted on by ether as other animal matters; and possesses the same microscopic characters, consisting, like them, of extremely minute globular molecules of equal size.

Dr Golding Bird considers the animal matter which occurs in the urine of the pregnant female (which he only recognised in the pellicle of keistein), as caseum, one of the elements of milk; and started a very fine theory to bear out his views. He ought to have stated the experiments on which his assumption was framed, but not one is mentioned; his conclusions appear to rest on the smell which the supposed animal matter yielded in putrefying. I, however, showed that it does not possess a single character of caseum, except in being an animal matter, so that his theory of milk being secreted in the breasts, being re-absorbed, and thrown off by the kidneys, goes for nothing, as it rests on baseless assumptions. If such was really the case, what becomes of all the other elements of the milk—elements, too, which are much more likely to pass off by the kidney than caseum, which is a simple

modification of albumen? He seems to think, from the breasts being affected in consequence of pregnancy, that it is likely they secrete milk. If the areola, however, and other peculiar appearances of the nipple and breast generally, are proofs of any thing, they are that the breasts are not engaged in secreting milk; for no sooner does the secretion of milk fairly commence, which it does at child-birth, than the areola and other characteristic marks begin to fade. He might as well, nay with far greater justice, attribute the appearance of this matter in the urine to disorder of the nervous system, or more likely still to that of the digestive function. The latter of these appears by much the most probable, as it is known what a powerful influence disorder of the digestive functions exercises over the urinary secretion; and all know that they are much disordered, especially in the earlier months of pregnancy, when this animal matter is secreted in the greatest abundance. There seems, however, to be no necessity for attributing its secretion to any other cause than direct irritation or disordered function of the kidneys themselves. They, in common with all other organs of the body, have their functions more or less disturbed by pregnancy, and if we take this into account, along with the disordered digestive functions, as well as those of the skin, we shall find sufficient causes to produce the effect, without having recourse to the very unphilosophical explanation of Dr Bird. In fact, it appears to me that it would be quite as philosophical to assert that milk was a vicarious menstrual discharge.

From a careful examination of the whole subject, the following conclusions have been arrived at.

1. That a peculiar animal matter is secreted along with the urine during pregnancy; and that it exists in the largest quantity during the earlier months.

2. That this matter often forms a solid coagulum resembling albumen, when the fluid holding it in solution is long boiled.

3. That this matter is largely soluble in the urine whilst hot, but more sparingly so when cold; that the excess is therefore deposited as the urine cools, along with the usual urinary salts, and forms the chief portion of the natural sediment.

4. That it is the animal matter of this sediment, which, by undergoing certain unknown changes, rises to the surface, and forms there the animal pellicle, known by the name of *kiestein*.

5. That the animal matter held in solution in the urine undergoes the same changes, and that as it also rises to the surface, it contributes to form the pellicle of animal matter.

6. That the animal matter of the natural sediment, that still in solution in the urine, and that which forms the kiestein pellicle, are all composed of globular particles of extreme minuteness and transparency, possessing in all these three states the same size,

form, lustre, and general appearance, being only more transparent when in solution; and that the coagulum formed during boiling has the same microscopic characters.

7. That the ultimate globular molecules of this animal matter possess the same microscopic characters as the ultimate globules or granules of albumen, caseum, fibrine, and gelatine.

8. That when thrown down from their solution by means of certain chemical agents, deposited naturally, or forming the pellicle, these minute globules or granules often arrange themselves into rounded agglomerations, which can scarcely be recognised to differ from pus or fibrinous corpuscles.

9. That ether removes, as a thick mucilaginous-looking fluid, all animal matters, as albumen, caseum, gelatine, &c., from their watery solutions.

10. That ether has the very same action as the animal matter in the urine of the pregnant female, removing it both from the natural sediment, and from its solution in the clear urine, in the form of a thick mucilaginous-looking fluid, when, like that of albumen, caseum, and gelatine, it floats on the surface of the watery portion of the liquid, but is itself covered by the free and pure ether.

11. That ether has the very same action on the pellicle of animal matter termed *kiestein*.

12. That ether does NOT so remove salts from watery fluids, whether they consist of crystals held in suspension, or are in a state of solution.

13. That the minute globular molecules or granules, of which this peculiar animal matter consists, are rendered more distinctly visible to the microscope when thus removed by means of ether; and no perceptible difference can be detected between the appearance of those molecules removed from the natural sediment, and those removed from the clear urine, or from the kiestein pellicle.

14. That the ultimate globules or molecules of albumen, fibrine, caseum, and gelatine, are also rendered much more distinct in consequence of being removed from their watery solution by means of ether, and when compared, under a powerful microscope, with the ultimate globules of the peculiar matter of urine, cannot be recognised to differ in any respect, either in size, form, lustre, general appearance, or in the agglomerated forms which they assume.

15. That all saline bodies, which are truly salts, and not animal matter, mistaken for salts, assume the crystalline arrangement, recognisable at least by the microscope.

16. That the matter met with in the urine of the pregnant female, never assumes the crystalline arrangement.

17. That salts undergo complete solution in water.

18. That animal matters are only apparently dissolved in watery fluids, but that their ultimate globular molecules may at all times be rendered at once apparent, by the addition of any agent which will not alter their properties, but only render them somewhat more opaque.

19. That the animal matters of the urine, those of gelatine, albumen, caseum, &c., are possessed of these peculiar properties of animal matter, and their ultimate globular molecules may in many cases be even seen by means of first-rate instruments, without any additions being made to the fluid which holds them in solution.

20. That former experimentalists seem in many cases, (perhaps in all?) to have described this animal matter met with in the urine, as the lithate or urate of ammonia, from its possessing a few characters in common with that salt; and from the chemical agents employed for ascertaining its presence decomposing that animal substance, and giving rise to the formation of an animal acid—the uric or lithic acid; just in the same way as these chemical agents act on several other substances, converting them into animal or vegetable acids.

21. That this animal matter is probably more easily decomposed by chemical agents, in consequence of its being thrown off as a useless excrescence; its elements being perhaps thereby rendered more disposed to enter into new combinations.

Lastly, That I was perfectly justified in describing this as a new animal matter, and applying to it the term of *gravidine*.

21 Rutland Street, 15*th July* 1842.

Article V.—*Observations on Pericarditis and Endocarditis, and the best modes of Treatment in these Diseases.* *By* Edward Octavius Hocken, M.D., &c. &c.

Rheumatic inflammations of the pericardial and endocardial investments of the heart are so comparatively common and well understood, that all authors refer to these in their descriptions of pericarditis and endocarditis; whilst, on the contrary, other varieties are so uncommon, that what we really do know of these diseases, is derived from the clinical investigations of the rheumatic forms. In my following remarks I shall confine myself to the rheumatic inflammations of these tunics solely.

Rheumatic inflammations of the heart are confined to particular forms of this malady, (rheumatism), and to particular varieties of this form. To explain my allusion, I may state, that I am considering rheumatism as divisible into the specific or gonorrhœal, and the common or atmospheric varieties, whilst the

latter is again divisible into the muscular, articular, &c. Now in the first division, or the gonorrhœal, the heart is, as far as I am aware, always exempt from inflammatory disease, showing in this, as in many other particulars, a marked difference from common rheumatism. In the second, or atmospheric form, the heart suffers only in the articular variety, in which, as is but too well known, its external and internal investments are so frequently and dangerously involved. I wish to lay particular stress on this frequency of occurrence and danger, and on the necessity of constantly and carefully *watching for* and *searching after* the symptoms which lead us to disguise their very commencement. If we could rely on our statistical records of rheumatism, it would be found that at least one in every two cases of acute articular atmospheric rheumatism, would present some disease of the heart; frequently, however, not discovered, and very rarely terminating in immediate death. But although these cases rarely prove immediately fatal, they generally lay the foundation for future disease and future death, the two diseases pericarditis and endocarditis having an inverse ratio in these respects—the first more frequently terminating in immediate death, and less frequently in future disease, the latter less frequently killing *per se*, but when once fully formed, and detectable by the ear, never receiving a subsequent cure, but sooner or later originating valvular disease, of which the acute endocarditis laid the foundation.

The two investments of the heart more frequently suffer together than alone; but I have remarked that endocarditis is much more common as a separate disease than pericarditis, and that where the latter affection has occurred, the former is almost sure to come on; hence, then, it is well, not so much to consider them separately, as to include them together in a general consideration of the rheumatic affections of the heart.

All our experience tends to prove that these diseases are never cured unless stopped at once—that however well the patient may apparently become, if the pericardium has become adherent, and the valvular action attended with a bellows murmur, his recovery is apparent only, and not real—that the seeds of future disease are laid, which it requires time only to quicken into fatal and fearful activity, which although slow, is nevertheless sure, and finally successful. If we examine these patients when apparently recovered from all disease, the bellows murmur still remains, and will be found to continue in all its original intensity for months and years after the original attack, although the heart's action may be healthy, and no other morbid symptom exists. Our prognosis under such circumstances cannot be favourable, for who can doubt its ultimate termination, and that by and by the affected valves will become more and more implicated, and mark

their changes by the increasing imperfection with which their functions are performed? The majority of diseases of the valves of the heart receive, I doubt not, their first beginning in endocarditis, and many have fallen victims to these diseases who have little suspected the origin of their complaint. If these things are so, how necessary is it to detect these diseases, and to cure them in their very birth—to diagnose them at the only period when they are susceptible of a *real cure*, and are amenable to medicine—to watch for their very commencement; in fact, to search for them, and anticipate their results; and to keep the patient in a state ready to attack them at a moment's notice; for to detect and prevent such disasters is one of the grandest triumphs of medicine.

In my following observations, I shall endeavour to fill up a few blanks which still remain in the otherwise full and clear knowledge which we possess of these diseases, avoiding those parts which are best known, and enlarging especially on those subjects which I deem most important. Rheumatic inflammations of the heart terminate in three different ways:—they either proceed to a fatal termination speedily; most commonly, however, they terminate in apparent, but unreal recovery; and thirdly, they receive a true and lasting cure, which is most rare of all, and happens only when recognised and stopped in their very commencement. As it is obviously the duty of the physician to aim at curing these affections, and not at merely suspending active disease and present danger, it becomes him as zealously and constantly to auscult the precordial region as to feel the pulse, or note the inflamed articulations, and in fact more so, as being the greater and profounder malady, which he should consider always to exist, at each visit, until convinced to the contrary by the complete absence, not only of general, but physical signs. No stage of the rheumatism should be considered too early for these minute and frequent investigations, as they have been said occasionally even to precede the more obvious symptoms, nor should any period short of complete recovery be thought too late to search for, rather than be surprised with their outbreak.

Mere general symptoms are most deceptive guides, for in many cases a *bruit* plainly tells the ear what not one pain, uneasiness, or any morbid symptom had previously indicated, even to the patient himself, and much less to his medical attendant. But the stethoscope never deceives, if we wait long enough for a *bruit*, or the friction sound to be developed. It is, however, painful to hear these morbid sounds, and feel that we have allowed those inflammations to go on which we cannot now hope to cure permanently: hence it is obviously our duty to ascertain if any other physical signs exist, which, taken in connexion with the presence of acute articular rheumatism, plainly point out the

very commencement of cardiac inflammation, and if so, to strive earnestly to prevent the further progress of the pericarditis or endocarditis, beyond that at which the sense of hearing took up the diagnosis. Such symptoms truly precede the more confirmed, but not less diagnostic signs of complete valvular derangement and roughening of the naturally smooth and lubricated surfaces of the pericardium; and on these I shall say a few words.

Physical Signs.—It is generally allowed, that a friction, or to-and-fro sound, occurring *de novo* in acute rheumatism, is an undoubted sign of acute pericarditis, and that a bellows murmur, commencing under the same circumstances, at any one or more of the valves, is an equally unequivocal sign of acute endocarditis; few, however, have gone beyond this, and described the signs of preceding stages. It is, however, not difficult to surmise that incipient disease of a valve would be attended with some sign, before it extended to such an extent as to allow regurgitation, or produce a *bruit* from the onwards current, and that inflammatory injection of the pericardium would roughen the sound of the heart's passing to and fro, before effusion of lymph imparted to it the roughness and coarseness of a saw. Facts, indeed, prove that such is really the case, and many times I have known a lengthening and roughening of the sounds, especially the first sound detected at the time of its occurrence, and suspected to be the beginning of rheumatic carditis, and the next day has but too truly verified these suspicions. In these cases, the first discoverable change from the healthy condition of the heart's state, beyond the mere excitement of general fever, has been an augmentation and abruptness in the impulse, and an increase in the hurry of its actions, soon followed by the slight alteration of its rhythm which I have cursorily mentioned. The first sound becomes unduly prolonged and roughened in its character, when contrasted with the second, which also is, in general, similarly affected, but in a slighter degree, so that the period of the systole encroaches on that of the diastole. The exact valve or valves principally diseased, mainly determine the peculiarity of these changes, which nevertheless principally, if not entirely, affect the aortic and left auriculo-ventricular apertures and valves. These alterations in the character, intensity, and duration of the sounds, depend chiefly on a slight and incipient regurgitation of the current of blood, which will be found to impart a peculiar feel also to the pulse: it is a thrill or vibratory impulse, which may or may not at a subsequent period degenerate into the jerk of considerable regurgitation.

Very frequently, if we watch carefully the sounds of the heart's action day by day, or visit by visit, we shall detect, in addition to the foregoing alterations, which, perhaps, have gone on to the production of a *bruit* at the base and apex of the heart, a rough-

ness in the alternate or to-and-fro motions of this organ,—a roughness without any decided *frottement*. This, when heard, is the very commencement of pericarditis, but it is, as far as I am aware, always preceded by the signs of endocarditis, so that, from this knowledge, the incipient signs of valvular derangement should be considered as the incipient signs also of pericarditis; and in this diagnosis, the frequency of their complications will almost invariably bear out the accuracy of our conclusions.

If we review the incipient stethoscopic signs of rheumatic inflammation of the heart, they stand in the following order:—

1*st*, An increased and abrupt impulse of the heart.

2*d*, An increased frequency in the actions of the heart.

3*d*, A lengthening and roughening of the sounds of the heart, chiefly or entirely marked in the first sound.

4*th*, A diminution of the diastolic period, chiefly marked in the period of repose.

5*th*, The commencement of a distinct *bruit*.

6*th*, A roughening of the to-and-fro motions of the heart, without a distinct *bruit de frottement*.

These stethoscopic signs being combined with a thrill or vibratory impulse in the pulse, so frequently and invariably have I known these symptoms to pass into the more confirmed but not less certain indications of acute endocarditis and pericarditis, unless stopped by early and active treatment, that I feel convinced they are the incipient signs, and are as trust-worthy and as truly diagnostic as could be a loud bellows murmur, or a *bruit de scie*.

I have a few words to say on the subject of *frottement*, but I would previously remark on the exact tissues which are inflamed, and primarily involved in rheumatic endocarditis and pericarditis. The inflammation seems to commence and be principally confined to the true fibrous tissues, secondarily involving the serous membranes in contact with them. In cases of acute pericarditis which have terminated fatally, we find this to be the fact. Dr Macleod[1] says, that on raising the sternum, lymph is sometimes perceived even in the interior mediastinum. The bag of the pericardium is seen to be inflamed, and the inflammation marked by a greatly increased number of vessels carrying red blood. The pericardium feels pulpy, or fluctuating; and frequently on cutting through it, we do not at once expose the heart, but find a layer of lymph intervening, adherent partially or more extensively to both serous surfaces.

In endocarditis, this fact holds good in a still more remarkable degree, for it commences in, and is mainly confined to the fibrous zone which surrounds the base of the valves, the fibrous tissue between the duplicatures of serous membrane, constituting the

[1] Treatise on Rheumatism, p. 69.

valves themselves, and to the cordæ tendineæ which pass from this intervening tissue to the carneæ columnæ. A most accurate observer, and excellent physician, Dr Latham, has written some of the most sensible and faithfully depicted "Essays" on diseases of the heart it was ever my lot to read.[1] In his second essay, which is on the "Morbid Anatomy of the Internal Lining Membrane of the Heart," p. 113, he observes, that it is remarkable how curiously disease is apt to limit itself to the spaces just pointed out, (viz. the tough white circles which surround the apertures of communication between the auricles and ventricles, the tricuspid and mitral and the semi-lunar valves of the pulmonary artery and aorta.) Of the fibrous circle between the auricle and ventricle, and the valves which originate from it, and of the tendinous cords which connect the valves with the carneæ columnæ, there will not be the smallest space free from disease; but the disease will abruptly stop where the tendinous cords cease, and the carneæ columnæ begin. Where the portions of the endocardium suffer, he says that the disease has seldom originated there, but has generally spread from other parts of the same membrane. In about one-third where disease has been found on the left side, it has existed on the right side also, and been essentially of the same character. But there has been a remarkable difference in the extent to which it has proceeded on each side respectively,—while on the left, it has gone so far as to be the undoubted cause of death; on the right, although essentially of the same character, it has been only just beginning. These facts are not without their practical bearing, since they prove that the morbid sounds which their diseased state originated, are really and truly the very first indications of the endocarditis itself, and that being the incipient stage, it will probably yield more readily to treatment than if it had gathered strength by continuance in the continuous tissue. Had the disease commenced in or been confined to any other situation, auscultation could not have detected its existence until the valves themselves had been more or less affected by inflammation of their fibrous or serous tunics; but now we know that the very essence of the disease itself consists in inflammation in and around the valves, and hence that the first change effected in any of these parts, immediately produces an alteration in the healthy sounds of the heart, by which the ear takes up the diagnosis, and affords a period for the employment of active and judicious treatment.

When the inflammation has extended to the serous membrane covering the fibrous tissue first involved, it is still most marked in those exact situations where the fibrous tissue is subjacent.

[1] *Vide* Medical Gazette, vol. iii.

Dr Watson has remarked,[1] that the valves may be divided into two parts, one thicker, the other thinner. The thicker part lies next the base of the valve; the thinner next its edge. A valve does not become thin by degrees, but the difference is marked by a distinct line of separation between the thicker and thinner portions, and this by a double curved line. It consists of two curved lines, running each from the centre of the edge of the valve, from the sesamoid body there situated to either extremity of the edge, where the edge joins the side of the vessel; so that there are two segments of a crescentic shape, thinner and less opaque than the remaining part of the valve, lying near the free margin. The anatomical cause of this arrangement is dependent on the fibrous tissue which is interposed between the duplicatures of serous membrane. It reaches the free edge of each valve at three points only; namely, at the centre, where it forms the *corpus aurantii*, and at the two extremities. Between these points it stops short, and presents on either side a scolloped edge, leaving two crescentic portions of the valve formed merely by the doubled endocardium.

The curious fact which first led Dr Watson to remark this natural structure was, that the minuter vegetations, which form upon the arctic valves, in acute rheumatic carditis, most commonly arrange themselves in a row, like a string of beads, along the line of union between the scolloped edge of the thicker scutiform portion of the valve, and the inner convex margin of the two thinner crescentic portions.

If we examine the recorded cases of rheumatic carditis, or, what is better, if we reflect on those we have ourselves witnessed, we cannot fail to be impressed with the great value of the signs of endocarditis, which always precede and accompany pericarditis. Valvular derangement is the first symptom or rather sign of cardiac implication, whether pericarditis follow or not, or whether it follow in a mild or severe degree. Dr Latham, in his first Essay, p. 214, as long ago as 1828, remarked that, in rheumatic pericarditis the *brouissement*, or *bruit de soufflet*, is always among the earliest symptoms referable to the heart, and sometimes the very first. The sign in question, of the peculiar sound accompanying the contraction of the ventricles, has not been absent in any one authentic case of rheumatic pericarditis, during a period of more than three years, and, he remarks, the number of such cases in so large an hospital as St Bartholemew's is considerable.

Supposing, however, we have failed to stop the progress of the disease, or are called in at a later period: lymph is thrown out, more or less abundantly in different cases, and the sounds of

[1] London Medical Gazette, vol. i. 1841-2, p. 691.

friction, or, more rarely, the creaking-of-new-leather sound, marks this result of inflammation in the pericardium. Now, the invariable rule of my observation in all such cases, and, I may add, of the experience of Dr Latham, (which is of much greater value,) commonly taught by him in his clinical instructions, although not published, is to the effect, that when once formed, it never terminates but in complete adhesion of the roughened surfaces, or in the death of the patient. However great the effusion of serum may be—however urgent the distress—however much the heart may be baffled in its actions, and strive and struggle until it become intermittent, irregular, and unequal in its contractions, still do the roughened surfaces pass over one another, and still the to-and-fro sounds of friction occur until death closes the scene. On the contrary, the sound may diminish, and finally cease altogether, whilst the condition (the present) of the patient improves in all respects. This favourable termination, because the best that, under such circumstances, can accrue, depends undoubtedly on the adhesion of the opposing roughened surfaces, and the consequent obliteration of such parts of the cavity of the pericardium. This adhesion of the inflamed portions of pericardium is, without doubt, the best present result of acute pericarditis, which has gone on to the effusion of lymph; it rescues the individual from the danger of immediate dissolution, although, as I shall presently have to show, it lays the foundation of future, but not less certain suffering and death.

I dwell on this subject from the fact that many authors of the best reputation on cardiac disease have erred in their opinions of the terminations of this sign. Drs Hope and Macleod, both of them, seem to be deceived in this particular, but I am glad to be able to add the testimony of so accurate an observer as Dr Watson to the opinions I have already expressed. Dr Macleod, in his recent work on rheumatism, says, at p. 55, that as the rubbing sound in pericarditis depends upon a cause which is transient, so is it one which does not endure beyond a very limited time; for if the opposing sides of the pericardium become coherent, or if they be further separated by serous effusion, then in either case the attriction ceasing, the sounds are no longer emitted, although the inflammation may still hold on its course. And, again, if the disease be overcome, the lymph may be absorbed, and thus the cause of the rubbing sound will equally be removed."

"These phenomena," says Dr Hope, (namely, attriction murmurs,) "only exist, 1st, At the commencement of pericarditis, before any considerable liquid effusion has taken place; 2d, In cases of what has been denominated *dry* pericarditis, that is, with effusion of lymph only; 3d, In cases where the absorption of the fluid portion has at length permitted the roughened surfaces to come in contact: for it is obvious that the interposition of any con-

siderable quantity of fluid, by separating the surfaces, would suspend the phenomena." That these gentlemen were, however, deceived in their expressed opinions, I have only to appeal to the observation of any one who has carefully and faithfully observed nature.

Dr Watson, in his lectures, already referred to,[1] has most correctly remarked, that "the to-and-fro or rubbing sound, is never of long duration, but it terminates in one of two ways: either the patient dies in a short time, the sound continuing to the last; and then the pericardium is found coated with rough lymph, but throughout the far greater part of its extent, or altogether *unadherent;* or the sound ceases, never to return, while the condition of the patient improves; or he even seems, to himself and to others, to recover his perfect health. In these cases the sound ceases, from a physical impossibility of its continuance, viz., from adhesion of the pericardium over the whole, or the greater part, of the surface of the heart. And in this category of apparent but unreal recoveries, I cannot doubt that many of Bouillaud's cases of '*pericarditis terminating in health*' ought to be included." I would add a caution, which, perhaps, need hardly be made, that in ausculting a rheumatic patient, we be well assured that the murmur we discover is not the effect of previous disease, before we diagnose a recent carditis. Many of these patients have suffered many previous attacks, and whether the heart has or has not been previously inflamed, can only be discovered by the history of the signs and symptoms of such attacks, and the intervening period.

The reason of the continuance of the to-and-fro sound of friction, even with very considerable effusion, extending with the increased dulness of the precordial region, and of the parts beyond it, seems to be dependent on the quantity of solid lymph which is always thrown out in these cases. We may feel the thrill, vibration, or *brouissement*, by applying the hand flat to the chest, in these cases, over the heart, and it is in these that the intercostal spaces between the second and third, and the third and fourth ribs are prominent, and present an undulatory motion, to be seen and felt, on each action of the heart.

I shall expend but little time in the consideration of general symptoms, before I proceed to the subject of prognosis. At the same time I should not be justified in overlooking one symptom, which is certainly very characteristic, when occurring in rheumatic fever, and one of the earliest indications of any implication of the heart. I allude to that peculiar expression of anxiety which the countenance so generally betrays, and which is foreign to the mere course of the rheumatism. The angles of the mouth are drawn backwards and upwards, and he seems to be conscious

[1] Med. Gaz., p. 694.

of some deep and impending evil. This anxiety is an occurrence quite independent and precedent of that distress and alarm of the system which profuse effusions into the pericardium, or polypous concretions in the interior of the heart occasion at a later period. It is these latter cases which Dr Latham has so graphically described.[1] He tells us that all the positions chosen by the patient, with the exception, perhaps, of that on the back, are positions of absolute constraint. The necessity of accommodation to any one of them (whatever it may be) is so urgent, that the patient is not merely unwilling, but feels as if it would be instant death to him to move. We should never lose sight, however, of the fact, that all general symptoms are fallacious, and that our main trust must be in the stethoscope, since wild and fierce delirium may set in, often quite independent of cerebral disease, and mask all the other symptoms. It may happen that cerebral symptoms alone attract any attention during life, and yet after death the nervous system be found quite healthy, and the heart alone diseased. Dr Latham details three such cases, in all which the brain and its coverings were found in a perfectly healthy and natural state. In one the heart itself was inflamed, the inflammation not being confined to its investing membrane. It was the most intense inflammation pervading both the pericardium and the muscular substance. In the second, the pericardium, towards which during life there was no symptom to direct the slightest suspicion of disease, discovered the unequivocal marks of recent and acute inflammation. The third case presented the morbid appearances of pericarditis solely and exclusively, and consisted of lymph deposited upon its surface, which had contracted slight adhesions, and some ounces of a green and flakey serum effused into its cavity.

Prognosis.—In my preceding remarks I have already intimated my opinion, that unless rheumatic endocarditis and pericarditis be stopped in their first stage, they never receive a perfect and satisfactory cure at all. But to set this proposition on a satisfactory basis, I will now enter again on the subject, to show the importance of an early diagnosis, before I go on to what I conceive to be the most judicious treatment. In the experience of Dr Latham,[2] the *bruit de soufflet* having once appeared, never subsides but with the complete reparation of the organ. The heart may resume its natural action; all pain, and all hurry of respiration may cease, and the patient, as long as he remains quiet, may believe himself well, yet the *brouissement* may remain; and if so, his return to the habits and exertions of health will bring back palpitation and other symptoms which bespeak the certainty of mischief still abiding in the heart.

It is a disease in which there is no medium between complete

[1] Essay v. p. 210. [2] Lond. Med. Gaz., vol. iii., pp. 214, 215.

reparation and certain death. It is a disease which continues but for a very brief space of time within the possibility of cure; and, moreover, it is a disease which cannot be successfully combated by common remedies.

Dr Watson[1] says also, that acute pericarditis, so far advanced as to occasion the pathognomic rubbing sound, does not admit of a perfect cure, and that its best event is the adhesion of the membrane, and the obliteration of its cavity; and even then, he says, the change is not final. Mere adhesion does so embarrass the movements of the heart, as to produce at length, sometimes rapidly, sometimes slowly, hypertrophy, and other alterations. It is held, too, and I believe justly, that the inflammation which begins in the membrane sometimes dips into the muscular structure of the heart, weakens its elasticity and cohesion, and so leads ultimately to dilatation of its cavities. The number of patients that come annually into the hospitals of London, affected with acute rheumatism, is very large; and I do not think that I am exaggerating when I say, that nearly one half of them have the heart or its membranes implicated. The cardiac affection may be easily overlooked, both by the patient and the physician. The recovery may appear to be perfect; but after some time palpitation begins to be occasionally felt, and by degrees, other symptoms, marking disease of the heart, declare themselves, but their origin is unsuspected or forgotten. You will be surprised, if you search back into the past history of all the patients who apply to you, having disease of the heart, especially among the lower classes of society, to find how many of them will tell you that they have, at some time or other of their lives, been laid up with rheumatic fever.

Dr Watson has remarked, (*loc. cit.* p. 721,) that he once thought that if we caught the inflammation at its very commencement, (viz. on the first occurrence of a *bruit*, and friction sounds,) we might calculate upon a perfect cure, by first bleeding the patient freely, and by, secondly, putting him as speedily as possible under the specific influence of mercury. The more he sees of this formidable malady, the more reason he finds for fearing that it is seldom within the possibility of thorough repair. The inflammation may be stopped, or nature alone will effect this; and you may greatly assist the natural powers in effecting this. But that alone can be called a cure, which either leaves the structure of the part affected in its original integrity, or at any rate, leaves no spring or source of farther changes for the worse; and such complete recovery as this he seldom dares to hope for, in cases of acute and general pericarditis.

There can be no use in deceiving ourselves in this matter. In

[1] Lond. Med. Gaz., vol. i., 1841-2, pp. 694, 695.

a large proportion of cases the patients will *seem* to recover; "but," says Dr Watson, "the recovery is so far unreal, that it involves the germ of future destruction." Follow these patients in their subsequent lives, and you will learn that many of them very soon begin to find that they are incapable of doing or bearing all that they could do or bear before their illness, and if this does not soon happen, it does at last. The disease of the heart, (if the patient be not cut off by some other malady,) becomes at length obvious, and when he dies, the source of the ultimate change is commonly to be detected. There is an adherent pericardium, or there is disease of the valves, of which no other account can be given, than that it had continued to exist since the primary symptoms of carditis ceased, and that it had caused all the rest, viz. the hypertrophy, dilation, &c.

Treatment.—Having proved, I trust, on a satisfactory basis, that the rheumatic diseases of the heart are not really cured or curable, in the true sense of the word, even when detected on the first origin of a decided *bruit*, or subsequently on the commencement of a distinct to-and-fro sound, even by the most judicious and persevering treatment, and that these sounds are not really the first detectable signs of these diseases, but that an earlier diagnosis may and will reward him who employs suitable attention and unwearied diligence in its pursuit, I shall now pass on to consider the only treatment which holds out the shadow of promise of a true and permanent cure. We can accomplish this only before, and at the true and actual commencement of inflammation of the heart, viz. by prevention before, and by a prompt affection of the system by mercury at the time of its origin.

Expectant Treatment.—Every case of acute articular rheumatism, especially when the synovial membranes are comparatively free from implication, and the disease is erratic, threatens imminent peril to the well-being of the heart, and on this account should always be treated in expectancy of such an occurrence. Mere blood-letting has little effect either in the prevention or causation of cardiac implication, yet nevertheless it paves the way for a more successful use of mercury, when we wish to affect the system with this mineral. Rheumatism is one of those diseases which would never receive a cure by mere loss of blood in any manner, and is certainly injuriously affected by carrying it too far, or by occasioning a shock to the system by any mode. Hence it requires care in its use and adoption. According to the constitutional powers of the patient, and the severity of the disease, it is generally advisable to employ venesection, carried so far only as to the very beginning of faintness, in order to avoid all risk of shocking the system, and thereby increasing the danger when first summoned to the case. Any further bleeding is

as unnecessary as it is injurious, till we can detect any tendency to disease of the heart.

The foregoing is comparatively an unimportant part of the treatment, compared with what I am now to recommend. *Calomel in large doses*, mainly with the object of its peculiar action as a purge, should *always* and *immediately* be used. Small doses have quite a different, and a comparatively useless action. To be truly useful it must be in full doses, and determinately used. Ten grains, with half a grain of opium, is a moderate quantity, and should be administered every ten or twelve hours to the fifth or sixth dose, when it will most probably relieve the rheumatism, but if not, it can no longer be continued in such doses. If each dose of the calomel fails to purge in a few hours, it must be followed by a mild but efficient purgative, such as castor oil. The object of this treatment is not to salivate, and if it occasion any such symptoms, it will defeat the purpose we should always hold in view in its administration; and consequently it can rarely be carried with safety beyond the fifth or sometimes the fourth dose. Its specific effects are to cut short the rheumatism, and to prevent the occurrence of rheumatic carditis.

But when we have carried the remedy, in its large doses, to the extent we find justifiable in each individual case, we may continue to use it in smaller quantities, if the rheumatism still persists. What we should strive at, under these circumstances, is to keep the system of the patient so far under the influence of mercury, that we can produce soreness of the gums rapidly when we will it, by modifying the dose; and yet so far from it, that all the symptoms of salivation are absent, only the constitution is on the point, or very near to, their production. Not only is the rheumatism best treated in this manner, but it is of the greatest importance should disease of the heart supervene, since we shall then be able to institute efficaciously that treatment which holds out any real prospect of benefit, at the very moment of time when it alone can be available.

Another valuable remedy is opium, which I have already mentioned in combination with the calomel, but now I allude to larger doses than are meant merely as a guard to this preparation. Its operation quiets the nervous system, relieves the pain, which forms no unimportant feature in the disease, and tends to prevent any agency which may prove a check to the system, at the same time that it acts, by fulfilling these intentions, as a powerful preventive of inflammation of the heart. Of all the preparations of opium, I prefer the compound ipecacuanha powder given twice or three times a-day, in ten-grain doses, between the intervals of the calomel purge, and continued subsequent to the diminution of the mercury. There can be no objection to colchicum and antimony in the form of a saline draught; but what I have

already mentioned is the essential treatment; and not until we have given the full doses of calomel their fair trial, should I be induced to commence these remedies.

Treatment of Rheumatic Inflammation of the Heart.—When, notwithstanding all our care and treatment, lengthening and roughening of the sounds of the heart have come on, we must, in some degree, modify our treatment. It is rarely advisable to employ general bleeding afresh on the commencement of these signs, but we must content ourselves to abstract as much blood locally, by the cupping apparatus or leeches, as we may deem advisable, in accordance with the nature of the case. At the same time the constitution should be brought as speedily as possible under the decided influence of mercury. The calomel, in grain doses, with one-eighth of a grain of opium, should be administered every hour, until decided tenderness of the gums is induced, and, if we fail in occasioning this state speedily, the action of the calomel may be assisted by rubbing in the mercurial ointment. The great advantage of previously maintaining a mild mercurial effect on the system, is the readiness with which it may be carried further in this stage, and that without any delay, or loss of time—for as I have previously shown delay is ultimate death. Small and frequent doses of calomel, more speedily and effectually salivate, than large ones repeated at greater intervals; it is on this account that I recommend calomel in the way which I have now mentioned.

When the action of the heart is very violent and disturbed, digitalis may be combined and administered with nitre and antimony, in the form of a mixture, at the same time with the bloodletting and calomel. The bleeding and the mercury are, however, the essentials, and digitalis but an auxiliary, and, compared with them, of feeble power. It is calculated more to quiet the heart than prevent, or remove the morbid products of inflammation.

When local depletion has been carried as far as we may deem advisable, blisters may be used, and not without benefit, supposing the heart disease still to progress. But they act with most advantage when there is effusion into the pericardium of much serum; producing rapid absorption of the fluid, and manifest general and local relief. As, however, I intend to confine my observations chiefly to the earliest stages of rheumatic endocarditis and pericarditis, I shall omit any further considerations, feeling that, in doing so, I shall consult the feelings of my readers, by whom these matters are well understood.

In the foregoing pages, if I have convinced any one of the necessity of searching for the earliest indications of carditis in acute atmospheric rheumatism, and of the advantage of expectant and prompt treatment, as the only possible hope of a true and per-

Fig. 1.

Appearance before last operation.

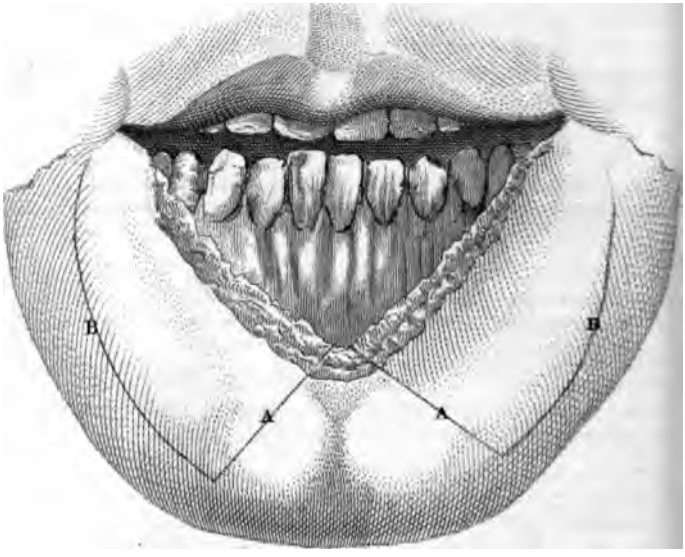
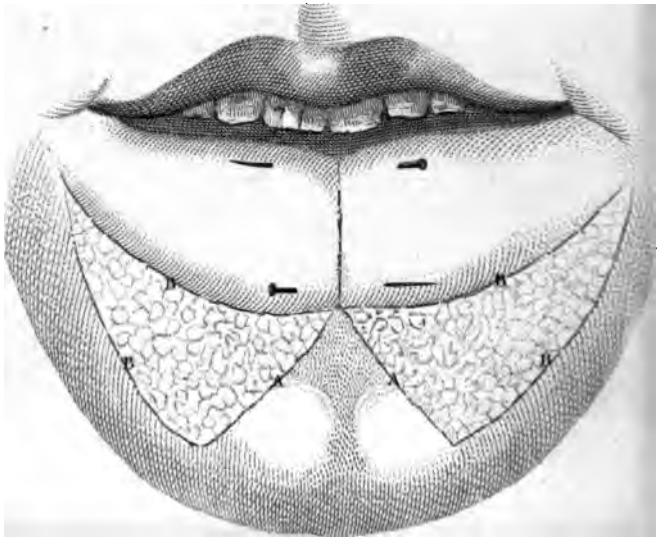


Fig. 2.

Appearance after last operation.



Dr. Chisholm's lip case.

manent cure, I shall feel contented in the idea, that my labour in the composition of this paper has not been lost or misspent.

15 SOUTHAMPTON STREET, COVENT GARDEN.

ARTICLE VI.—*On Restoring the Lower Lip.* *By* S. CHISHOLM, M.D., *Inverness.*

William Monro, from the parish of Urquhart, aged 60, was admitted to the Northern Infirmary in January last, having the whole of the lower lip involved in a cancerous disease. Owing to some family circumstances, he had to leave the house without having had any operation performed on him, and during his absence, applied to a medical gentleman in a neighbouring county, who excised the lip in the usual way, (V), bringing the parts together with the twisted suture. As might however be expected, from the great loss of substance, the parts, shortly after the operation, gave way. Repeated attempts to produce adhesion proved equally unsuccessful, and the man was re-admitted to the Infirmary about the end of March. On re-admission, the whole of the under lip, from angle to angle, and down to the chin, as represented in the plate, Fig. 1, was wanting. The saliva was constantly flowing down over the chin.

I first made an incision from the lower part of the breach in the lip, obliquely down to the side of the chin, as pointed out by the line A. Then a somewhat semilunar incision, (line B), from near the angle of the mouth to the termination of the first, and separated the flap thus formed from its connection with the gum underneath. The same was done on the other side, and the two flaps brought together with the twisted suture, as represented in Fig. 2. The parts healed kindly, and the man left the institution, extremely thankful for the result of the operation, which succeeded to my utmost satisfaction.

INVERNESS, 28th May 1842.

ARTICLE VII.—*Observations on the Development of the Blood Corpuscles in the Chick, with the various changes which they present from their first appearance to their full development; with some remarks on these changes.* *By* WILLIAM MACLEOD, ESQ., *Surgeon, late Assistant to Dr John Reid in the Pathological Department of the Edinburgh Royal Infirmary.*

Previous to 1838, physiologists were wholly unacquainted with any general law by which the development of structure could be

explained. In that year, Schwann of Berlin induced, from the generalization of numerous isolated facts scattered through the various scientific journals, along with his own observations, the grand and universal principle, that all organized structures have their origin from cells.[1] Since that year, numerous microscopic observers have increased to a great extent the facts by which the above principle is supported.

The following observations are designed to show the manner of formation of one of the bodies belonging to the first class of Schwann's classification of tissues—the blood corpuscles—with the different changes which they present from their first appearance to their full development. These were made on the blood corpuscles of the chick. Before describing the appearances which they present in their process of development, I shall state shortly the manner in which these observations were conducted. To get the blood perfectly pure, I removed it from the heart of the chick, (this can be done so early as the third day,) so that none of the granules contained in the nutritious matter which surrounds the embryo could enter the blood. I diluted the blood thus removed with fresh filtered serum. To allow the appearances going on within the corpuscle to be seen more distinctly, I used weak acetic acid, which was the only reagent employed. I also examined the blood contained in the germinal membrane and allantois, diluting it with the fluid albumen contained in the egg; and the appearances which the blood corpuscles presented in all these situations, were the same, provided the two last structures were examined at the proper time; for if the examination is made very early, the oval appearance of the blood corpuscles will not be seen, as they do not take this form until after the fourth day.[2] By examining the blood in these different ways, I hoped to be able to remove all chance of fallacy.

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[1] This statement is not altogether true, as Raspail, in his *Organic Chemistry*, has the following sentence:—"Organization, on the contrary, is, as it were, a crystallization which gives a tendency to assume a vesicular form, and produces a cell capable of absorbing the gases necessary both for its vesicular development, and for the reproduction of others similar to it. This cell is a laboratory where gases are condensed into liquids, which in their turn are organized into textures. It is in short, an organized body."[1] And in one of his papers in reply to Dutrochet, published a short time subsequent to his *New System of Organic Chemistry*, is contained the following startling expression. "Give me a cell capable of producing others, and I will form an organised world." These are not his exact words, and I cannot at this moment lay my hands on the paper in which this remark is contained; but the idea, to which the above sentence gives birth, is the same as that contained in the original.

[2] The time of this appearance, however, varies much in different chicks, as also does the time of the appearance of the different structures and organs. This is not the effect of any external cause, as it is observed when the eggs are put into the hatching house at the same time, and removed together after having lain there for a certain period, and when consequently all external circumstances must have been the same to each and all of them.

[1] Raspail's Chemistry, translated by Dr Wm. Henderson, p. 10.

I shall divide the following description into three stages. In the first, the different changes which the blood corpuscles present from their first appearance, until their central part has become granular. Second, from the gradual disappearance of this granular structure, to the flattening of the sides of the corpuscle. And, *thirdly*, the changes which they present whilst passing from the circular to the oval form.

First Stage.—On placing the blood removed in the manner above described under the microscope, a number of small granules are seen floating about in the field; these enlarge and become clearer in the centre; this enlargement goes on very rapidly, and when they have gained to about twice their original size, the central clear part becomes dull. This dulness slightly increases, and in a short time it is seen to be distinctly granular, whilst the borders are observed to be well defined, smooth, and clearer than the central part. The enlargement of these bodies, with the granular appearance of their centre, seems *not* to depend on the aggregation of granules round a central one, but on a property which they have *in* themselves of enlarging and of presenting that figure. In the field, a number of these objects are frequently seen close together, and many of them appear more granular than the rest. During all this time they are quite spherical, and are of good consistence, as they do not lose their form by considerable pressure.

Second Stage.—The central portion becomes gradually less opaque, and gradually ceases to appear granular, the external portion at the same time separating in some degree from the central part. This part I shall subsequently call nucleus. The blood corpuscle in this stage of development has the appearance of a slightly flattened round cell, formed of a somewhat delicate but elastic membrane, with a nucleus in the centre. At this time, a number of these bodies, being close to each other in the field, present a yellowish colour. This colour seems to me to reside in the space between the nucleus and membrane. Of this, however, I am not certain. During the time that the elastic membrane is separating from the nucleus, the intervening space becomes flattened. This flattening goes on to such an extent, as to leave a depression between the nucleus and border. The edges of the corpuscles are flat, appearing as if they had been cut off abruptly. The convexity of the nucleus, the flattened edges of the corpuscle, and the concavity intervening between these two parts, are distinctly seen when any of these bodies, at this stage of development, are observed turning upon themselves. During all these changes the blood corpuscles are perfectly circular.

Third Stage.—One side of the corpuscle is seen gradually to elongate itself, until it has gained a pear-shaped appearance; the opposite side then elongates itself in the same manner, and

to the same degree. At the same time that the envelope is becoming elongated, the nucleus undergoes a similar change, so that every part of the corpuscle becomes narrower than before, with the exception of the middle, which remains of the same size. During these changes, the concavity which was observed to exist in the second stage, in the space which intervened between the nucleus and border, is now seen gradually to disappear; at the same time that this change is going on, the borders, which were at that time like those of a guinea-piece, have now become rounded, so that there is a gentle convex declivity, (if I may be allowed so to express myself,) between the nucleus and borders. The nucleus, during all the above changes, remains convex, and never presents a granular appearance subsequent to the first, and beginning of the second stages. I have never seen any opening in the centre of the nucleus, the envelope appearing to pass uninterruptedly over its surface. The envelope itself continues gradually to increase in strength from its first appearance, to the complete formation of the corpuscle.

It is stated in the above remarks, that the cytoblast of the blood corpuscle is seen to enlarge, and its central clear part to become granular, and that these two changes seem to depend on a process *inherent* in the body itself. This notion of the manner of formation of the above appearances, differs from that of most observers on this subject; for it is stated by them that it is caused by the joining together of numerous nucleoli contained in the blood. That this statement is not correct, the following circumstances clearly prove. At the time of the enlargement of the cytoblast, or cell-germ, its circumference is seen to be *not* scolloped, but smooth and regular. Now, this it could *not* be, if the enlargement depended on the aggregation of nucleoli. Again, at the time of the granular appearance of the central part, the nucleus is seen to be surrounded by a thin but distinct membrane, and that this membrane separates somewhat from the nucleus, *during the time that body is becoming granular*. These circumstances hinder us from believing that the granular appearance is caused by the junction of several independent granules to each other, whilst *they entirely agree with the statements above made*. This appearance is exactly similar to that discovered by Prévost and Dumas in the ova of frogs, and by Martin Barry in the germinal spot of the ovum, during the development of these bodies. I do not state this merely from the plates of Martin Barry on this subject, but from the structure itself. I saw those granular or disc-like bodies so correctly described and illustrated by him in the ova of a bitch, whilst assisting Dr Allen Thomson during last summer. Here I may state, that those divisions seen in the ovum were observed by Dr Allen Thomson a year previous to the publication of Martin Barry's papers in the *Philosophical*

Transactions, of which he made drawings, which he has now in his possession by him. I do not state this circumstance with the most distant intention of withdrawing from Martin Barry any of the credit which is due to him as the original discoverer. My design is to show, that there can scarcely remain any doubt as to the correctness of the *description* of the disc-like bodies seen in the developing ovum, as given by Martin Barry, when the same appearance has been seen by one of the best and most careful observers of the present day, and this the more especially, when these were made previous to the publication of the observations which they support. Dr Allen Thomson also observed, and made drawings of the granular appearance which the centre of the blood corpuscles present, in some stages of their development, some years since, when engaged in observing the development of the vascular layer in the embryo chick. With these I was wholly unacquainted, until after I had shown to Dr Thomson the observations above described, when he exhibited to me these drawings, representing correctly the granular appearance of the nucleus in its first stage of development.

For what end is this appearance designed? It appears to me to be the cause of the enlargement of the nucleus, and of nothing else. This opinion is different from that held by Martin Barry, for he states,[1] "that the corpuscles of the blood are generated by a process essentially the same as that described in one of my former memoirs, as giving origin to those cells which are the immediate successors of the germinal vesicle or original parent cell;" and in the last paragraph of this paper are contained the following statements:—"On a former occasion, I showed that the blood corpuscles are not formed, as supposed by some observers, out of the granules of the yolk. The facts recorded in the foregoing memoir leave little doubt, I think, that these corpuscles—not only in the embryo, but at all periods of life—are descendants of the two cells constituting the foundation of the new being in the ovum. If so, it is not requisite to seek the origin of these corpuscles in the organised parenchymatous substance of the body, or in the globules of the chyle, the only two sources," it has been said, "in which it was possible for them to arise." I am inclined to believe these statements to be incorrect, and that from the two following reasons: namely, that the granular appearance of the nucleus is *only* seen while that body is *developing* itself, this shape wholly disappearing when it has become fully formed; and from the fact that I have *never* seen these disc-like bodies, of which the nucleus, in its process of development, is composed, *separate* from each other, or *escape* from within the envelope of the blood corpuscle. If these three last state-

[1] Phil. Trans. 1840, p. 204.

ments be correct, it is clear that Martin Barry's assertion as to the origin of the blood corpuscle is erroneous.

In the foregoing observations it is said, that the membrane separates gradually from the nucleus. This separation does *not* take place in the manner generally described, namely, by a delicate transparent vesicle arising on the surface of each granule or cytoblast, in the form of a flat segment or sphere, like a watch-glass on a watch; but by the separation of a membrane or vesicle round the *whole* circumference of the cytoblast at the *same* time. This separation goes on gradually, and to the same extent round the whole surface of the cell-germ in the first and second stages; but in the third, one of its sides juts out, and then the other, until it has attained the oval shape of the full-grown blood corpuscle of the chick. Struck with the great resemblance between the envelope of the blood corpuscle in its physical appearances, at its full development, as also in the different changes towards that end, with the basement or primary[1] membrane of the ducts of the Wolffian bodies, with the sarcolemma of the muscular tissue, with neurilema of the nervous structure, &c. &c., I was led to examine into the structure and properties of these parts more minutely; and although my observations are not yet sufficiently extensive, to cause me to deduce from them with certainty any definite principle, yet so far as I have gone, I am led to believe that *every* organised substance in the animal kingdom is immediately surrounded by a pellucid and elastic membrane, having *no* fibres, vessels, or nerves in its structure,—that it is acted on in the same manner, and to the same extent, in all situations, by acetic acid—and that in this membrane *resides* the property of eliminating or forming (?)[2] from the blood the various structures in which reside the *inherent* properties of the different tissues, as likewise the secretions and excretions. If this general statement be correct, then the proper name for this structure, in *all* circumstances, as also in *whatever shape* it may present itself, will be the *eliminative* or *formative* membrane.

In the foregoing pages, it is observed, that we suspect the colouring matter of the blood to reside in the space between the nucleus and capsule. The data on which this suspicion rests are

[1] I give these two terms out of justness to Mr Bowman and Mr Goodsir; as Mr Bowman, in his description of the mucous membrane, gave the first term to that structure, lying immediately beneath the epithelium; whilst Mr Goodsir, about the same time, and without any knowledge of these observations, gave the latter term to the same structure, seen in the uriniferous ducts of the kidney.

[2] I use the mark of interrogation after the word "forming," because we have no facts to prove that any organised structure has the power of changing chemically the ingredients of the blood. We have facts to prove that they *afford* circumstances for allowing changes to go on *in* the blood itself. We have *none* to show that these structures are the *immediate* cause of these changes.

as follow. At the time that the capsule closely surrounds the cytoblast, this body seems to be wholly deficient of any colouring matter, for let ever so many of these bodies, at this stage of development, be gathered together, they never present a yellow or reddish appearance, while as soon as that membrane or vesicle separates itself from the cell-germ to any extent, and a number of these bodies being at the same time close together, this yellow colour is seen. Moreover, this colour appears to take somewhat of a reddish hue, as the separation extends. From these facts, we are fully warranted to suspect, if not more than suspect, that the colouring matter resides in the situation above stated.

The appearances above described disagree in many points with those of Martin Barry, the latest writer on this subject. It is not my intention in the following remarks which I am about to make on his description of the blood corpuscle, to examine into the correctness of the opinion as to the immediate formation of various structures from these bodies. My design is to endeavour to prove that many of the appearances which he describes as belonging to the blood corpuscle in its natural state are incorrect. He states, at page 203 of the *Philosophical Transactions* for 1841, that "in all the blood corpuscles now referred to, which it will be seen are those of the four classes of vertebrated animals, including the two divisions of both reptiles and fishes, the nucleus has a cavity or a depression;" and further on he says, that "the corpuscle of the blood in certain states exhibits an orifice by means of which there is a communication with the exterior of the corpuscle and the cavity in its nucleus." In support of the above statement, Martin Barry brings forth the observations of De Torre, published in the *Philosophical Transactions* for 1766, p. 252, and before bringing these forward he premises them with the following sentence, "So little importance is attached in the present day to the observations of De Torre, that in a historical account of the blood corpuscle, I believe it is usual to pass them by as not deserving of notice,[1] probably from an idea that his optical instruments were too imperfect; but I do not hesitate here to transcribe a passage from the observations of De Torre, although far from vouching for their entire accuracy." The following is that which he describes. "When any of the globules (blood corpuscles) happened to move with the serum in the most perfect focus, I could with great clearness distinguish the exterior and interior circumference of the ring of which each globule (corpuscle) consisted, the interior one being bounded by a black line or shade next the perforation exactly resembling that which bounded the exterior one. In such globules (corpus-

[1] This is not correct; Bostock, in his *Physiology*, mentions De Torre's observations succinctly but correctly.

cles) I could easily observe the ring articulated, the transverse lines at the joints being very distinguishable; the figures of the articulations were various, in some they were roundish, so that the rings appeared like a bead necklace, in others cylindrical, and of some length. The numbers of which the whole was composed seemed uncertain, varying from two or three to six or seven, many of the rings were broken, either by some confinement of the tales (talk) or by beating against each other. which I saw them continually do, and by these accidents the joints of the rings were detached, and wandered about separately in great numbers, and indeed they seemed separable with as much ease as if they had been united by mere contact only. Some of the rings were broken into semicircles, others into greater or less portions, others again divided into their constituent articulations, which, in some places, float about singly, or in others form, by their mutual attraction, a lateral union, like the pipes of an organ. I must observe, also, that these separated parts seem to be hollow and transparent, and like inflated bladders, and would easily yield and change their figures, stretching or contracting from round to oval and cylindrical, and *vice versa*, or any lateral pressure. in crowding them along with the serum, brought a constraint on them. Although the articulation was not distinguishable in every globule, I think it was so in the greater part of them, and it is natural to imagine that the rest were articulated likewise, though they might not pass at the proper distance for its being distinguished." The reason for transcribing the above long extract is, that we might have before us the principal statements of De Torre, whilst criticising his observations. The first thing that must strike every person who knows the history of the blood-corpuscle, and who reads the above quotation, is astonishment at finding that any one, at this time of day, quotes the above statements of De Torre, believing that the greater part of them are correct. This astonishment must be increased tenfold when Martin Barry is known to be the believer. I have no hesitation in stating, that the appearances described by De Torre, when referred to the blood-corpuscles in their natural state, are erroneous. The basis on which the above assertion is founded, are the following facts, taken from De Torre's paper, when compared with the acknowledged physical properties and appearances of these bodies in the present day. He states, in the paper above referred to, "that many of the rings were broken, either by some confinement of the tale, or by beating against each other, which I saw them continually do; and by these accidents the joints of the rings were detached, and wandered about separately in great numbers, and indeed they appear separable with as much ease as if they had been united by mere contact only." From this statement it seems very evident

that it was *not* the blood-corpuscle in its natural state which he saw; as these bodies then possess a good deal of strength and elasticity. That they have these properties, is very evident from the various forms which we see them undergo, whilst circulating in the capillary vessels, in consequence of them infringing on the walls of those tubes, and on each other, and on their immediate return to their original figure, when the causes on which these changes depended have been removed. Now, bodies which appear to *separate* with as much ease as if they had been united by contact only, could *not* possess these properties; the very circumstances of the case hinder it. De Torre's statement may be, and is true, in some degree, if confined to the blood in some unhealthy states, or as the effect of some re-agent; but the whole tenor of the above extract clearly shows, that such is not the case, as they lead us to believe that he always imagined the blood corpuscles to be perforated and articulated. Again, De Torre states, near to the end of the paper so often referred to, "I omitted to speak of the size of the globules in this observation, nor indeed can I, from so various an appearance, form any judgment thereof." Now, the blood corpuscles in their full growth are *not* very various in size, at least their difference is *never* so great as to cause any one to give out such a statement as the above. These appearances described by De Torre seem to me to depend on the three following causes: 1st, On the imperfection of his instruments; 2d, On his using water in making his observations on the blood; and, 3d, From the affinity which the blood corpuscles on their parts have for each other. We have no facts to prove the first cause, but I think we have a right to suspect observations of such minuteness as these were, the more especially as they differ from the observations of all other observers, when made with "rude and smoked lenses," for it must always be remembered that it is habit only that makes the expert microscopist, not genius or great talent—these are required to *use* the observations made, not to make them. In support of the second cause, I am unable to bring forth immediate facts to prove that water was used, but I think the following statements are sufficient to make us believe that such was the case. At the time De Torre wrote his paper, it was not known that water could change the appearance of the blood-corpuscles, at least we have no statement, as far as I am aware, to that effect. Now, as these bodies cannot be examined properly without the serum in which they are contained being diluted, either with more serum or some other fluid; and as water is always at hand, whilst serum is not; and, moreover, as many of the appearances described by De Torre may be seen on diluting the blood with water, we have every reason to believe that this fluid was used for that purpose. That the blood-corpuscles and

their parts have an attraction or affinity for each other, almost all microscopic observers grant. To this property of the blood corpuscles do we owe almost all the errors contained in Sir Everard Home's description of the formation of the different organic structures. De Torre himself observed this property, and to it he indeed refers many of the appearances which he saw. He says, "and the others formed by their *mutual attraction*, a lateral union, like the pipes of an organ." I have frequently seen the blood-corpuscle, in its several stages of development, form a great number of the appearances which De Torre describes, with many others, "*and they all separated as easily from each other as if united simply by contact.*" These three causes seem to me fully to account for the different appearances of the blood-corpuscle described by De Torre,—appearances described by no other author. From the foregoing arguments, I think we are at full liberty to conclude that De Torre, in his paper published in the *Philosophical Transactions* for 1755, has *not* described the blood corpuscle in its natural state, and therefore that the above paper, for the truth which it contains in relation to this point, may be returned, and that without any disadvantage, to its former oblivion; and when it is again produced, it may be only to please the fancy of some laborious, but useless, book-antiquarian. In relation to the observations of Martin Barry, above quoted, concerning the cavity in the nucleus and of the opening in the envelope, I can only say, that I have never seen them in the blood corpuscles of the chick, in any stage of their development, and I have examined these bodies for days and weeks together. They always appeared to me to be very decidedly convex in the centre, and the envelope or vesicle seemed to pass continuously over them.

Note.—The statements made by M. Donné as to the changes which the blood corpuscles of mammalia present in their development, seem to agree somewhat with the observations just recorded. But the *manner* by which he states that these are produced is quite at variance with that given above; for he says that two or three of the "globulines," (granules) unite together, and form the "white globules," which he describes as colourless, irregular in their contour, and having a granular aspect. This appears to be my second stage, and he says, that after three or four of the "globulines" have united together, and whilst circulating with the blood, they receive an albuminous envelope; whilst it is stated above that the granular appearance is *not* formed by a process of *affinity*, but by one *innate* in itself. As it is not at all likely that the process by which their appearance is produced will differ in the least degree in any species of animal, and as the process which I have described is agreeable to that first observed by Prévost and Dumas,[1] and afterwards supported and extended by Von Baer[2] and others in the ova of frogs, and by Martin Barry,[3] and Allen Thomson in the ova of mammalia; and, moreover, as we have no positive proof that a cytoblast ever enlarges by the aggregation of two or more granules, I will not, perhaps, be thought presumptuous, when I say that it seems probable, in consequence of the very great difficulty which attends the examination of the development of the blood corpuscles in mammalia, that M. Donné is not correct as to the cause which he assigns for the production of the granular appearance and enlargement of these bodies.

[1] Ann. de Sc. Nat. t. ii., 110. [2] Müller's Archives, 1834, 481. [3] Phil. Trans., 1840-1841.

PART SECOND.

REVIEWS.

Memoir of the late James Hope, M.D., Physician to St George's Hospital, &c. &c. By MRS HOPE. *To which are added, Remarks on Classical Education, by* DR HOPE; *and Letters from a Senior to a Junior Physician, by* DR BURDER. *The whole edited by* KLEIN GRANT, M.D., &c. &c. 8vo, pp. 358. London: Hatchard & Son, 1842.

As no branch of British literature is more barren than medical biography, we gladly receive any contribution to its meagre store.[1] The life of the eminent physician, although devoid of varied and stirring adventure, presents to the contemplative mind subjects of deep and enchaining interest. "A physician (says Johnson) in a great city, is the mere plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence; they that reject him know not his deficience." This gloomy picture points not to the rule, we hope, and would fain believe, but to the exceptions. Unquestionably many of the names most illustrious in the history of medicine might be adduced in opposition to the assertion of the moralist: yet, alas! how true is it, that many noble spirits, after surviving the dangers of years of laborious study, in the closet, in the pestilential atmosphere of the fever hospital, or in the loathsome hovels of poverty, disease, and vice, who commence practice, conscious of their high claims upon public patronage,

[1] The following are perhaps the most remarkable biographies of medical men that have appeared in this country:—'Pearson's Life of Hey,' 'Baron's Life of Jenner,' 'Gregory's Life of Good,' 'Lives of British Physicians,' 'John Thomson's Life of Cullen,' (of this masterly work the first volume only has been published), 'Boott's Life of Armstrong,' 'Wilkin's Life of Sir Thomas Browne,' 'Palmer's Life of John Hunter, 'Pettigrew's Life of Lettsom,' and his 'Medical Biographies.' We would strongly urge it on the attention of some one competent for the labour, to present the profession with a well digested 'Biographia Medica.' Such a work is much wanted. The 'Medical Bibliography' of Mr Atkinson, (London, J. Churchill, 1834), shows how much may be done; and should this gentleman, whose learning and perseverance render him well qualified for the task, see fit to continue his work, (which as yet only embraces the letters A and B), we earnestly entreat him not to diminish its value by the extraordinary digressions and execrable puns that disfigure the first volume.

are doomed only to meet with bitter disappointment—destined, it may be, to live in obscurity, and die in poverty. And when wealth and honour do at last reward the exertions of the ardent and conscientious cultivator of medical science, is it not in general, after his energies have been greatly wasted, and his head silvered, more with care, than with years? Mungo Park preferred the toils and dangers of African discovery to the life of the country surgeon; and the subject of the present biography, in talking of the future prospects of his son, said, "I could not have the *cruelty* to bring him up to my own profession."

In the memoir before us, however, we meet with a brighter picture than that we have just contemplated. During the two first years of Dr Hope's practice in London, his income amounted to L.200 a-year; and at the time of his death, in 1841, it had risen to L.4000. We cannot afford space to follow the history of his prosperity in detail, and must refer those anxious to do so to the book itself.

The following passage may to some convey a useful hint:—

"There is a vulgar proverb, which makes familiarity the parent of contempt; and in the case of medical men, this is strikingly verified. When a man becomes known as an agreeable man in society, as a musical performer, as an artist, as an adept in general science—in fact, as any thing but a professional man, he loses his chance of securing a patient in almost the same ratio as he gains popularity. Dr Hope used often to notice this; and he remarked, not only that his friends and acquaintances were the last to discover his professional merits, but that, even when converted into patients, he had much less influence with them, than with those whom he had first known as patients, and who were afterwards changed into friends. Dr Hope's experience led him to form the conclusion, that in a professional point of view only one benefit can be derived from a large circle of acquaintances. In canvassing for public appointments, their friendly exertions may be useful; or, at all events, they convey an idea of the influence which a man can command, and this very idea conduces to success." Pp. 67, 68.

This is not the place to offer any extended remarks on the merits of Dr Hope as an author; that he has done much to advance pathology must be allowed by all. His *Treatise on the Diseases of the Heart and Great Vessels*, which is decidedly the best monograph on that subject, has passed through several editions in this country, and has been translated into many of the languages of Europe. The private character of Dr Hope was one of great beauty. He was an accomplished man, a humane and honourable physician, and a sincere Christian. The memoir is written in a simple unaffected style; it contains much that is worthy of serious and attentive consideration by all aspirants after professional success; and we know of no work from which sounder views can be derived, both from precept and example, regarding the legitimate path by which it is to be attained.

Du Strabisme. Par A. A. VELPEAU, &c. &c.

On Squinting. By A. A. VELPEAU, *Professor of Clinical Surgery in the Medical Faculty of Paris, Surgeon to the Hospital la Charité, Member of the Royal Academy of Medicine, &c.* [*A Supplement to the Elements of Operative Medicine.*] 8vo, pp. 180. Paris: J. B. Baillière, 1842.

We have no space on the present occasion to enter again [1] upon the subject of squinting, and the operation for its cure; but we are desirous of embracing this opportunity of urging upon those competent to the task, the propriety of publishing the result of their experience, now that the operation, and the different methods of performing it, have been a sufficient time before the profession to admit of the deduction of safe conclusions. We do not say that nothing good has been written on squint-cutting; but we certainly think, that there is still a want of something more authoritative and satisfactory than has yet been presented to the profession. The work of M. Velpeau deserves attention, as it contains very copious details relative to the subject. We do not entirely approve of the author's practical views. He reprobates, as it deserves, the presumption of those who have endeavoured, in absence of any other claim on public confidence, to appropriate this department of surgery. It appears that a similar system, with the same end in view, has been pursued both in this country and in France. The following is an account of the itinerant strabismus doctors of France:—

"When we see the eagerness with which itinerant operators trumpet their success, one at Versailles, another at Luneville, Boulogne, Arras, Marseilles, Nancy, and in fact at every town in France,—when we see the ardour with which these gentlemen advertise themselves in the Parisian and provincial newspapers, and announce their "*guérisons immanquables*," with all the tricks of quackery, is it possible, (I appeal to themselves,) to receive with confidence the statements of such men. Forced to examine for myself their *facts*, and to discover what they meant by *cures*, I can affirm, that at Paris, I have seen the individuals operated upon by them, squint outwards after having squinted inwards, continue to squint after two operations, afflicted with protrusion of the eye, ectropion, large denudations of the eye, and all the bad consequences which have happened in the hands of ordinary surgeons. I will add, that these accidents have most frequently come under my observation among the patients of those who have most puffed themselves, particularly among the patients of those who have advertised in the newspapers. It is a misfortune to see the dignity of the medical profession thus compromised; and unquestionably this conduct has been the cause of notable discredit to the operation itself. After having enjoyed an unexampled popularity, it has become in Paris, as elsewhere, the subject of serious doubts. The public

[1] MONTHLY JOURNAL, March 1841, p. 197.

having been accustomed to see daily in the newspapers, that the operation for the cure of squinting was easy, exempt from every source of inconvenience, and uniformly successful, at last believed all this to be true, and hurried in crowds to put themselves at the mercy of the operators. Time has now cleared away in a great measure the delusions on this subject, and shown that many squints which have been cut, have not been cured, or that one deformity has only been exchanged for another. The public has thus, from an excess of trust, passed into a total distrust in the operation; and many who might have their squinting cured, are thus induced to be resigned to its continuance." Pp. 14, 15.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

On the Lymph-Globules of Birds. By George Gulliver, Esq., F.R.S.

It is well known that the blood of the vertebrate animals contains, besides the numberless red discs, a few pale globules, which have very commonly been regarded as those of lymph. In birds, however, the globules which constitute the greater part of the juice of the lymphatic glands are generally rather smaller than the pale globules of the blood; and, as I have noticed in the appendix to *Gerber's Anatomy*, the same fact is observable in the mammalia. Yet the descriptions given since Hewson's time of the lymph-globules of birds, have always been drawn from the pale globules of their blood.

The distinguished inquirer just mentioned states, that the particles of the fluid of the lymphatic glands of birds are oval, like the nuclei of their blood-corpuscles. In the *Philosophical Magazine* for February 1840, I gave an account of the lymph-globules of the musk deer, from which it appears, that these scarcely differ in size from those of man, notwithstanding the blood-discs of this little ruminant are the smallest at present known; and although the camelidæ have oval blood-corpuscles, I found that the globules of the thymus, of the lymphatic glands, and of the pus of these animals, had the usual circular figure, and nearly the same size as the corresponding globules in other mammalia.[1] It was to be expected, therefore, that the lymph-globules of birds would possess a similar form, and this I have lately ascertained to be the case.

The pale globules noticed in this paper are those well-known white and

[1] See Medico-Chir. Trans., vol. xxiii.; and Lancet, 1840–41, vol. ii. p. 101.

slightly granular corpuscles which are generally seen at once very plainly in the blood, as they appear, under certain adjustments of the object-glass, with a distinct and dark circumference. But there are other pale particles in the blood. Some of these are isolated, and agree in all respects with the globules of the lymphatic juice, being smaller, often rather fainter, and with a less definite contour than the pale globules first mentioned. In the blood after death there are also frequently observable small shapeless white fragments, consisting of circular or oval granules, hardly as large, seldom larger, than the globules of the lymphatic fluid; and minute oil-like particles are often seen in the fragments. In birds this granular matter often exactly resembles in structure the colourless fibrine, obtained from their blood by washing it in a linen bag, and the granules are frequently just like the nuclei of the blood-discs. The white granular matter is often abundant when the pale globules are either difficult to be found or entirely absent.

The following are the mean measurements of the lymph-globules of some birds. They are expressed in fractions of an English inch:—

1. Pigeon, (*Columba Livia*, var., Briss.), 1-5274. 2. Song Thrush, (*Turdus musicus*, Linn.), 1-5090. 3. Common Fowl, (*Gallus domesticus*, Briss.), 1-5261. 4. White Owl, (*Strix flammea*, Linn.), 1-5227. 5. Young Heron, half-grown, (*Ardea cinerea*, Lath.), 1-5150. 6. Rook, (*Corvus frugilegus*, Linn.), 1-5053. 7. Jackdaw, (*Corvus Monedula*, Linn.), 1-5238. 8. Starling, (*Sturnus vulgaris*, Linn.), 1-5152. 9. Jay, (*Garrulus glandarius*, Flem.), 1-4414. 10. Magpie, (*Corvus Pica*, Linn.), 1-5001. Pale globules of the blood, 1-3555. 11. Greenfinch, (*Fringilla Chloris*, Temm.), 1-4924. 12. House Sparrow, (*Fringilla domestica*, Linn.), 1-4682. 13. Yellow Bunting, (*Emberiza Citrinella*, Linn.), 1-4572.

These measurements, excepting No. 5, were obtained from the particles of adult birds at different seasons. The lymph-globules in most of the above-named species, do not differ much in magnitude; and it is possible that further observations may show as much variety in the size of the globules of any one bird, especially if examined at different periods, and compared in growing and mature specimens. In a few instances, from one to five of the globules were seen to be inclosed with granular matter in a cell, the diameter of the latter varying from 1-2600th to 1-1114th of an inch. If the lymph-globule be regarded as a cell-nucleus, of course the smaller rounded particles which it frequently contains will be nucleoli. Sometimes from two to six of these may be observed in one lymph-globule, in which case they are very minute; and it is not unusual to see a single central and larger nucleolus, varying from a quarter to half the size of the lymph-globule.—Abstracted from *London, Edinburgh, and Dublin Phil. Mag.*, June 1842.

On the Nuclei of the Blood-Corpuscles of the Vertebrata. By George Gulliver, Esq., F.R.S.

When the corpuscles of the oviparous vertebrata are mixed with water, or with dilute or strong acetic acid, the nuclei are instantly exposed in the clearest manner, appearing thick, oval, or spherical, and much smaller than their envelopes. Several other vegetable acids may be used with the same effect; and the nuclei may also be readily shown by gently moistening with the breath some dry blood on a slip of glass. But when the blood corpuscles of man and other mammals, not excepting the oval discs of the camellidæ, (see *Med. Ch. Trans.*, vol. xxiii.; and *Lancet*, vol. ii. p. 101, 1840-41), are treated by any of the means just specified, and precisely under the same circumstances, no similar nuclei will be observed, unless in very young embryos; for the corpuscles of these enclose an obvious but temporary nucleus, which corresponds to the persistent nucleus of the corpuscle of the oviparous

vertebrata. This does not prove that the corpuscles of mammals contain no central matter, although it induces the author to believe that these corpuscles have no nucleus like that contained in the corpuscles of the lower vertebrate animals, as mentioned by him in his appendix to *Gerber's Anatomy*, pp. 13 and 30.

He then gives two figures to show the effect of several re-agents, and especially of repeated washing with water till all the colouring matter is separated, on the corpuscles of mammalia and of the lower vertebrata. He shows, as he formerly stated, (*Phil. Mag.* for Feb. 1840, s. 3, vol. xvi., p. 106-107) that the corpuscles of man, for example, are merely reduced about one-third or one-fourth in size after the complete removal of their colouring matter by repeated additions of large quantities of water, when the washed corpuscles appear very faint, flat, and pellucid, presenting no appearance of a nucleus, even when treated with acids and other re-agents; nor do these washed blood discs agree in any respect with the particles which had been commonly described as the nuclei of the blood corpuscles. Now, when all the colouring matter is in like manner removed from the corpuscles of any of the lower vertebrata, the goose for instance, the envelopes and nuclei remain, are easily seen to be distinct parts, both appearing circular, and the nuclei with its component minute molecules or nucleoli. When exposed by an acid, the same nuclei present an oval form. Dilute muriatic acid scarcely affects the form of the envelope, but shows the nucleus with an appearance of granular matter around it. The same acid makes the corpuscles of a mammal appear puckered or shrunk, notched at the edges, or granulated; some presenting a distinct central spot, irregular at the margins like a granular nucleus, others remaining smooth, but misshapen, generally with a dark or brilliant central spot, according to the focus of the instrument.—Abridged from *Mr Gulliver's Contributions to Minute Anatomy, Lond. and Edin. Phil. Mag.*, August 1842.

OBSERVATIONS ON THE SEMINAL TUBES AND SEMEN OF MAMMALIA AND BIRDS. BY G. GULLIVER, ESQ., F.R.S.

[*The paper, of which the following is an abstract, was read to the Zoological Society of London, July* 26, 1842.]

Size and Contents of the Tubes.—This is an interesting subject, because it is connected with the habits and economy of the animals. The author, after alluding to the valuable labours of Professor R. Wagner, gives an extensive table of the state of the testes and their contents, with the diameter of the seminal tubes at different periods. The size of the tubes increases during the growth of the animal, even before birth. In birds, as the seminal tubes become turgid and enlarged in the spring, their coats are much attenuated, contrary to Professor Wagner's observation, that they expand and become thick at that time.

Molecules of the Semen.—These have much the same chemical and physical characters as the minute oil-like spherules depicted by the author (in his appendix to *Gerber's Anat.*, p. 103), as forming the mass of the particles in the juice of the suprarenal bodies. The common diameter of the seminal molecules is about 1-20000th of an inch, but they vary usually from 1-35000th to 1-8000th. The author supposes that these molecules are connected with the perfecting of the semen, since they are very abundant in the seminal fluid of birds and reptiles just before the testicles become ripe, and wholly disappear or become scanty as soon as the spermatozoa are completely formed. He remarks incidentally, in reference to a former notice (*Atlas to Gerber's Anat.*, p. 59), of the difficulty of determining the exact shape of particles so extremely minute, that many which he has formerly mentioned as spherules, may, in reality, be discs, in conformity to some of the elaborate researches of Dr M. Barry.

Pigment of the Testes.—In certain birds the testes are yellow or black; and the ramifications of the black pigment are described in the seminal tubes, or their coats, of the common starling.

Spermatozoa of the Genus Cervus.—The author mentions the immature spermatozoa as coiled up, two or three together, within cells, the bodies of these spermatozoa appearing on their edges. He showed drawings of the perfect spermatozoa of the wapiti, red deer, and fallow deer, especially with reference to the singular statements in the fifth volume of Sir E. Home's *Comparative Anatomy*, which have been well commented on by Dr Davy in his *Researches*, vol. i., p. 338.

Chemical Characters of the Spermatozoa.—The spermatozoa of mammalia are peculiar for resisting the action of many potent re-agents.[1] These spermatozoa are but little, or not at all, affected by nitric, muriatic, acetic, oxalic, tartaric, and citric acids; by saline solutions, or by caustic alkalies. But the *spiral* spermatozoa of birds are acted on energetically by the acetic and other vegetable acids. Yet it is singular that the *cylindrical* spermatozoa of birds, as of the common swift, are nearly allied in chemical characters to the spermatozoa of mammalia.

When the seminal fluid contains an abundance of corpuscles, it is quickly made ropy by alkalies and by saline solutions, an effect which is produced by these re-agents in other animal fluids containing great numbers of fresh primary or isolated cells, or cell-nuclei, as more particularly noticed in respect to the lymph, in the appendix to *Gerber's Anat.*, pp. 91, 96, 97. In some recent experiments the lymph globules were but slightly altered, merely a little misshapen, after having been kept several days in saline solutions.

On the Structure of Fibrine. By George Gulliver, Esq., F.R.S.

The author, referring to his description and plates, in the English version of *Gerber's Anatomy*, of the fibres and the organic germs or nucleated nuclei in pale or colourless clots of fibrine, now figures similar corpuscles, though of a ruddy colour, in the red parts of the edges of such clots. He is disposed to regard all these germs as nearly allied to blood corpuscles, especially as Dr M. Barry has so pertinently asked how many tissues there are that the corpuscles of the blood may not form? It is remarkable, however, that both the ruddy and the pale organic germs of fibrinous clots are irregular in shape, and exhibit no nuclei when treated with acetic acid, while the very same treatment does not show any nuclei in the free or floating blood discs. If, therefore, the organic germs of fibrine be blood corpuscles entangled in the clot, these corpuscles must have undergone changes both in physical and in chemical characters. A figure is given, in which the germs are shown in a mesh of delicate fibrils, together with many very minute circular molecules. The fibrils are also depicted in the fibrine obtained by washing from the blood of the oviparous vertebrata, which fibrine is further characterised by containing many particles similar to, and probably identical with, the nuclei of the blood corpuscles.—Abridged from *Lond. and Edin. Phil. Mag.*, August 1842.

Muscular Fibre of the Heart, Gullet, &c. By G. Gulliver, Esq., F.R.S.

Some observations on the muscular fibre, especially that of the heart and gullet, were read at the Zoological Society, June 14th, 1842, by Mr Gulliver. We subjoin a short abstract of the main results.

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[1] This fact, as regards man, may probably be turned to account in forensic medicine.

1. In many mammals, as the insectivorous Feræ, Usidæ, Mustelidæ, Ruminantia, Rodentia, &c., the muscular fibre of animal life runs along, or forms a complete investment to the entire length of the gullet, and sometimes extends a short distance on the cardiac end of the stomach.

2. In man, the Quadrumana, Viverridæ, Felidæ, the porpoise, the horse, &c., the muscular fibre of animal life terminates on the gullet, at a more or less distance before it reaches the stomach.

3. In birds and reptiles the gullet has no covering of the muscular fibre of animal life; while in fishes this fibre often extends along the whole length of the gullet, and often on the cardiac extremity of the stomach.

4. The assertion, therefore, of Professor Müller, that "the third act of deglutition is perfectly involuntary, being performed by the muscular fibres of the œsophagus, which are not in the slightest degree capable of voluntary motion," though applicable to a few animals, is by no means true of others, such as those noted in paragraph 1.

5. In the heart of mammalia, the primitive muscular fascicles, as is well known, in many respects resemble the muscular fibre of animal life. But this resemblance, according to Mr Gulliver's observations, ceases in most of the lower vertebrate animals, since in the heart of these the fasciculi are less obvious, the transverse striæ, and the minute beaded fibrils are absent, the whole structure being made up of bands or fillets, generally from 1-5300th to 1-2600th of an inch in diameter, which are frequently aggregated into indefinite fascicles. In short, the minute structure of the heart in reptiles and fishes, has not the same resemblance to the muscular fibre of animal life as the heart of the mammalia, but is more like the muscular fibre of the coats of the intestines or the elastic tissue, although in certain larger species of the lower vertebrata the transverse striæ may be seen in the fibres of the heart, as in the iguana.

6. The existence of a sheath, or sarcolemma, around the muscular fasciculi of the heart, even of mammals, is difficult or impossible to be shown; the fillets or bands in the heart of the lower vertebrata, have no apparent sheath; and the muscular fibres of the heart of mammals are not connected together by any visible cellular (filamentous) tissue.—See *Proc. Zool. Soc.*, Sept. 10, 1839.

7. In some of the voluntary muscles of many animals the primitive fibrils are distinct enough, although the muscular fascicles and the transverse striæ are either very delicate, indefinite, obscure, or invisible; and the sarcolemma cannot be shown. The great pectoral muscle of birds, as the common swift, for example, may be compared with other muscles of the same bird; and some muscles of mammals, as the common mouse, have very indistinct fascicles and transverse striæ.

The results generally imply, that with regard to the gullet, many animals possess the power of voluntary motion over the whole length of the tube; while in others—and the human subject belongs to these—this power is confined to a more or less extent of the cervical and thoracic portion; and in reptiles and birds the motions of the gullet are altogether quite involuntary.

PRACTICE OF PHYSIC AND PATHOLOGY.

TWO CASES OF INFLAMMATION OF THE VEINS OF THE LIVER; WITH REMARKS. BY ERNEST LAMBRON, *Interne des Hôpitaux*, &c.

Few authors have treated of the subject of this paper, and most of those who have done so have confined their attention exclusively to the *vena porta*. In November 1839, Dr F. Dufresne published in the

Gazette Médicale an essay entitled "*De l'Inflammation du Système Veineux Abdominal*," in which are collected all the facts that we have on inflammation of the veins of the abdomen. It is an excellent monograph, though from necessity, imperfect; yet the facts which it contains are sufficient to justify some physiological and practical conclusions. The publication of the following cases may, I trust, also tend to elucidate this subject.

Case 1. *Phlebitis of the vena porta, caused by a fish bone, which passed through the pyloric extremity of the stomach and the head of the pancreas, and became fixed in the trunk of the superior mesenteric vein.*—On the 4th June 1841, Frances Roussois, aged 69, of low stature, tolerably muscular, but looking older than he really was, became a patient at the hospital of *La Pitié*. For some weeks he had suffered from his stomach, with constipation, and occasional desire to vomit. To relieve these symptoms he had taken, about a week before admission, a grain of tartar emetic, without any good resulting. On the day he came into the hospital he was seized with shivering fits and retching, and at night he slept ill. At the morning visit on the 5th he was examined with care. The pulse was natural; the respiration good; but the tongue was white, and he had a disposition to vomit. He complained of constant pain in the right hypochondrium, with exacerbations, which he compared to smart cramps; pressure on this region was scarcely painful. From the 6th to the 9th he had no shivering, but the pains in the hypochondrium were very violent and greatly exhausted him. The tongue was covered with a white coating; there was still some inclination to vomit; pressure on the epigastrium was not painful; the constipation still continued. On the 8th the patient suffered more; the skin and the sclerotica had a yellowish tint. On the 11th this became more decided. Up to this time the urine, tested with nitric acid, had exhibited no change, but it now yielded with it a green hue, becoming rose coloured when the acid was added in excess. He was cupped over the liver; the previous treatment had been confined to hospital drinks and a little tartar emetic on one occasion. On the 13th, the pain was less, but the shiverings continued with hot and sweating fits. The tongue was dry and loaded with a blackish crust; he had hiccup, and the pulse was 96. He passed some green liquid stools. The spleen did not seem to be sensibly enlarged, but on account of the well marked paroxysm of fever, 20 centigrames of sulphate of quinine were administered. On the 14th, the sulphate of quinine, which had been taken two days, had in no way checked the fever, which, in all its phenomena and stages, simulated the regular intermittent. The hiccup, jaundice, pain in the right hypochondrium, absence of lesion in the other parts of the body, and normal volume of the spleen, indicated *hepatic phlebitis*. The symptoms, though occasionally ameliorating, became increased in severity; and on the 24th the stages of the fever became confounded; on the following day there seemed to be no remission. On the 25th also, the tongue, which had been moist, became dry, and the patient complained of pain, with which he had not been troubled for five or six days before. On the 26th and 27th the shivering fits and hiccup returned; the fever assumed the remittent type; the pulse became hard and full; a little of the crepitant *râle* with a slight blowing sound was heard at the base of the right lung. The patient was much exhausted. A blister was applied to the right side of the chest. On the 28th and 29th he continued to sink; he had some delirium; his pulse was 104 and compressible, and he died during the night between the 29th and 30th.

Autopsy, 30 hours after death.—All the tissues had a yellowish tint. There was no serosity in the abdomen. The liver was of normal size. Its colour was deep green or bronze. Its coats presented nothing morbid, excepting the serous, which had at some points adhesions with the fold of peritoneum which covers the diaphragm. The gall bladder, which was full of natural

bile, was of the usual size; it also had some adhesions. The biliary canals were somewhat dilated. A cut made by accident gave exit to a small quantity of reddish sanium mixed with small flakes of pus. Upon continuing the dissection with care, it was found to come from the vena porta. An incision was made into this vessel, when there issued forth a gush of liquid like the dregs of wine. On following the mesenteric divisions of this vein, a fish bone was found passing through the coats of the trunk of the superior mesenteric vein. It lay imbedded in the head of the pancreas, traversing obliquely from above downwards, and from before backwards to the anterior wall of the vein, entering its cavity and penetrating the posterior wall. The length of the bone was about three centimetres, its thickness that of a strong pin; the end engaged in the vein was twisted into the shape of a corkscrew. It is difficult to say with certainty the kind of fish to which the bone belonged, but it appeared to be that of a flounder, and had probably been hardened by salting. At the place where ulceration had been produced by this foreign body, the mesenteric vein had its cavity obliterated by false membranes of a slate-grey colour. They adhered to the walls of the vein so as apparently to be united in one substance, from the mouth of the small veins in the upper part of the jejunum to the orifice of the splenic vein, becoming less and less adherent, and one of them was loosely lying upon this opening so as almost to cover it. Beyond this obliteration the divisions of the great mesenteric were healthy; for some inches they contained fibro-sanguineous clots. The splenic vein was of natural calibre, consistence, and colour, but it contained a quantity of the fluid like dregs of wine, similar to that found in the vena porta, which very probably, however, had entered during dissection.

Before proceeding with the description of the alterations in the veins, let us inquire, How did the bone get into the position which it occupied? Did it come directly from the stomach? To settle this question, the stomach was replaced in its original position; when, upon its posterior surface, and about a centimetre from the pylorus, a brown spot was seen of a millimetre in dimeter, corresponding to the free extremity of the bone, and presenting in the centre a small depression covered with smooth peritoneum without any trace of adhesion. The corresponding point of the inside of the stomach was not brown, but exhibited a hole into which might be inserted with ease the point of a pin. By means of a bristle, we ascertained that this passage led almost but not entirely through the walls of the stomach, that is to say, it was obliterated at the place where the small depression on the external surface of the stomach, already described, existed. Through this passage the bone had passed, we can hardly doubt; subsequently it had become closed, and the slight adhesions connecting it with the pancreas had probably been broken up by the vomiting.

The trunk of the vena porta was not obliterated, but was puckered by false membranes, slightly adherent to the walls of the veins, which were a little thickened. The portal sinus was filled with a mixture of blood and pus. There were no abscesses in the liver, but on a level with the portal sinus there was some softening of its substance, presenting such an appearance as to make it probable that had the patient survived, part of the organ would have been converted into pus. The subhepatic veins were perfectly healthy, and contained very little blood. The spleen, kidneys, and intestines did not seem affected with disease. There was some hypostatic pneumonia of the right lung, but neither lung presented any trace of an abscess.

CASE 2. *Phlebitis of a sub-hepatic vein, occasioned by the neighbourhood of a metastatic abscess which opened into its trunk.*—On the 18th April 1841, John Paston, a carter, aged 48, of middle stature, and pale yellow visage, entered the hospital of La Pitié. He seemed of weak intellect and eccentric, stating that he wished no medical advice, would take charge of himself, and

had only come into the hospital to rest for some days. Upon entering into conversation with him, however, it came out that eight days before, when returning home at a late hour, he was attacked and robbed, having been felled to the earth by the stroke of a stick. Since then he had suffered from fever, especially in the evening. Before that he enjoyed good health. There was no trace of wound or tumour on the head, but slight pressure on the point which had been struck gave pain. The man had an anxious countenance; his general state was bad, the pulse 80 and strong, the skin rather hot, the cheeks red, the tongue yellowish; and he had a great deal of thirst. His appetite was capricious, and occasionally he was troubled with indigestion. Pressure on the epigastrium caused some pain; no tumour could be detected; he had sometimes colic, and alternations of colic and diarrhœa. The respiration was a little embarrassed, and in part of the right lung there was a crepitous *râle*, and a little resonance of the voice. There was an abundant mucous expectoration. He was bled and put on low diet. On the 19th the state of the lung was better, the crepitous *râle* less in number and dryness, and the pulse 80, though less strong. On the 21st there was no improvement; a blister was applied. On the 22d, at noon, the patient was seized with shivering, followed by a hot and sweating fit. The spleen was observed to be obviously increased in bulk. On the 23d the paroxysm of fever again occurred at about the same hour. He was ordered 15 centigrammes of sulphate of quinine. The paroxysms of fever ceased, but otherwise there was no improvement. On the 7th May the fever came on as formerly. The three stages were well marked. The spleen was somewhat enlarged. On the following days, notwithstanding the exhibition of the sulphate of quinine, the fever continued, but the stages were not so well marked, and the sweating and shivering took place at the same time. On the 25th he had bilious diarrhœa. On the 27th the fever became remittent. On the 5th of June the patient died, exhausted by fever and colliquative diarrhœa, which had continued during the last eight days of his life.

Autopsy.—The inferior lobe of the right lung presented all the characters of pneumonia in the second degree, already passed into the chronic state. At the pyloric extremity of the small curvature of the stomach, there was a cancerous ulcer which had destroyed the mucous coat on a surface of the size of a two-franc piece. At this place there was a small flattened scirrhous tumour. The rest of the intestinal canal presented nothing else remarkable excepting that the mucous coat was pale and discoloured. The other organs were healthy. The brain weighed only 800 grammes—a third of the average weight of the adult brain—but presented no lesion. The liver was of normal size; its usual red colour depending on the blood which circulates through this organ was exchanged for a pale yellow; it looked greasy. Circumscribed parts of the surface, however, were covered with red points, and contrasted in a very marked way with the yellow. They were regularly disposed in such a way as to be evidently the interlobular veins filled with blood and apparent in the centre of the lobules. To determine why all the lobules had not their interlobular vein congested, the liver was cut into, and the subhepatic veins dissected out. Seven or eight purulent deposits were found in the substance of the liver, which many members of the Anatomical Society, including M. Cruveilhier, recognised as metastatic abscesses. The largest was as big as a hen's egg. When cut into, the circumference of the section exhibited the colour of the dregs of wine; then became greyish on approaching the centre where the hepatic tissue was altered or replaced by sanious pus, of a red grey, or dirty yellow colour. One of these abscesses was situated in the immediate vicinity of one of the trunks of the subhepatic veins, which join the cava, at the place where it is still adherent to the right side of the lobulus spigelii. This abscess had by its neighbourhood caused inflammation; and it so invaded the venous trunk, as to present, at some lines from its point of junction with the cava, an ulcer of about eight milli-

metres in its greatest diameter; the pus passed by easily from the abscess into the vein. The part of the vein comprised between the ulceration and the vena cava was covered with tolerably thick false membrane, which protected the internal membrane from the contact of pus. Above the ulceration the vessel was greatly inflamed, and its calibre was obliterated by false membrane, and a fibrinous clot; the ramifications of the vein beyond this stoppage were filled with coagulated blood. It was, in fact, a solid injection done by nature, enabling us to see, in an admirable manner, the disposition and distribution of these veins. By means of the scalpel, and a single lens, we were enabled to follow these veins into the interior of the lobules. The biliary passages appeared healthy. The gall-bladder was filled with bile of a whitish, or rather dirty-yellow colour. It was more fluid than natural, and had a somewhat watery appearance.—*Archives Générales de Médecine*, June 1842.

[The remarks by the narrator of the cases we have not room to subjoin; but this is the less necessary, as we have given these very remarkable cases without almost any abridgement. The first may be considered as unique; and the other is not less interesting to the pathologist.]

OBSERVATIONS ON DIAGNOSIS OF ANEURISM OF THE AORTA. BY ROBERT LAW, M.B., &c., Professor of the Institutes of Medicine in the School of Physic in Ireland, Physician in Ordinary to Sir Patrick Dun's Hospital, &c. &c.

Aneurism of the aorta has ever been regarded as one of the most obscure diseases within the range of medicine, in consequence of the admitted absence of any pathognomonic sign, until its existence is announced by a tumour capable of being either seen or felt. Although pathologists aver that it has no peculiar or special symptoms, yet we are disposed to believe that if these symptoms, which are generally considered equivocal, be submitted to a closer examination, differences will be found to exist between them, and that the diagnosis of the disease will be a matter of as little conjecture or guess as most internal diseases.

Aneurism, when not exhibiting itself externally in the form of a tumour, may discover itself in the derangement that it produces in the functions of the organs with which, in its development, it becomes connected; the mere mechanical pressure that it exercises upon important organs, produces in these disturbance more or less cognizable. The less the organs submitted to this pressure are able to endure it, the more marked are the symptoms to which such pressure gives rise. Comparatively little light is thrown on aneurism situated in the abdomen, from this source; the organs in this region bear pressure more easily, and are more free to escape from such pressure. It is in the thorax especially that an aneurism, pressing upon important organs, gives rise to symptoms which often tend to its discovery. The pressure may be exercised upon the organs of respiration, or deglutition, or circulation, so as to interfere with their respective functions. If the trachea is pressed upon obliquely instead of directly, the respiration will be more feeble in the lung corresponding to the side on which most pressure is exerted. In one case, an old man, who came under my care for oppression of the chest and dyspnœa, the only stethoscopic sign discoverable was an unusually loud sonorous *râle* in the left subclavicular region. It conveyed the impression of bronchitis confined to a single tube. The *râle* was so loud as to mask every other sound. The respiration was very distinct on the opposite side, but not unusually so. After he had been some time under my care, and the symptoms not improving, a more strict examination was instituted, when, in addition to the *râle*, the respiration on that side was found less distinct, without any dullness on percussion to account for it. The idea

of an aneurism then suggested itself, and a pulsating tumour was discovered in the back, between the posterior margin of the left scapula and the spine. The patient left the hospital, but died in a fortnight after, having previously thrown up a large quantity of blood. The feebleness of respiration in one side may also be owing to mere congestion of the mucous membrane of the bronchi, as has occurred to us in one case. The patient was cured by a treatment appropriate to bronchitis.

When the aneurism occupies the ascending, or arch of aorta, there is always a double pulsation; the explanation of this is still a desideratum. In many cases there is no permanent abnormal sound, but only an occasional one, as after depletion has been used; and in none of the preparations which we possess of aneurism of the thoracic aorta from its orifice from the heart to its entrance into the abdomen, did the tumour ever present a permanent *bruit de souffiet*, or any other anormal sound, if there were no disease of the heart present. Dr Stokes has already alluded to this point as influencing the regimen of aneurismal patients, that low diet or depletion deprives the blood of its coagulating property, or diminishes its fibrine, and thus opposes nature's *modus medendi* in this disease. If there is dysphagia, we must be cautious in the use of instruments, as if it is depending on aneurism, and force is employed, we would be very apt to open the sac. If the tumour pressed on any of the large veins, phenomena will be produced tending to indicate the disease. In one case, in a man aged 42, the face, arms, and neck became suddenly of a purple hue after a walk; the veins of the neck felt hard and knotty; the heart's action was normal, except that it was heard beyond its ordinary limits, and especially toward the right subclavicular region. There was no dull sound beyond the precordial region; the respiration was everywhere distinct. The patient complained of no pain, but seemed to experience great distress. An aneurism was suspected, but the suddenness of the attack did not seem to warrant the impression. He gradually sank, and at the post-mortem examination, an aneurism of the size of an orange, from the posterior and right side of the ascending aorta was found pressing upon the superior cava. A partial adhesion had formed between the opposite sides of the vein, so as to divide its channel into two, and at the point where its sides were pressed together, there was a circular opening communicating with the aneurism. The aortic valves were healthy. A case nearly similar to this one was published in *The Lancet* of 16th August 1833. Pain in the back, as a symptom of aneurism, does not seem to have been duly appreciated; it is of two kinds, a constant dull aching pain, and an occasional sharp, darting, lancinating pain; and we believe that this character will serve, when present, (for it is admitted that aneurism is often unattended by any pain), as a pathognomonic sign of this disease, more especially if there is epigastric pulsation accompanied by a *bruit*. If this sound is also heard at the back, there is almost certain proof of the existence of an aneurism. The epigastric pulsation and the pain in the back occur in females affected with spinal irritation, but those patients who have aneurism can bear pressure better than the subject of spinal irritation; the latter shrink from the slightest touch, and often even before being touched. As aneurism is more frequent in men than in women, the complaint of pain in the back and epigastric pulsation in the former should excite suspicion of this disease in the mind of the physician, whereas when they occur in the latter, he should be more inclined to consider them as nervous; yet as aneurism occurs in females, and as there are hypochondriacal men, as well as hysterical women, the mind ought to be free to exercise an unprejudiced judgment. What explanation is to be given of the sharp lancinating pain? Is it to be classed among the neuroses? Many of the symptoms seen in our patients would lead us to suppose so, and we have observed the strongest men, when affected with this disease, exhibit as marked hysterical symptoms as the most delicate female, and one of them complained of globus hystericus. What are we

to say of the fixed dull pain! Are we to connect it with the destruction of the structure of the vertebrae, with which it is so often associated? Or does it depend upon the position of the aneurism in reference to its being so circumstanced as not to be free to enlarge itself! Or is it the characteristic modification of the sensibility of arterial tissue when inflamed?

In a great many of the detailed cases of internal aneurisms, the pain in the early stage of the disease has been looked upon as rheumatism, and a treatment suited to this disease has been employed. Perhaps no positive mischief resulted from this, still this is no vindication of ignorance. A physician should, if possible, know what the disease is that he has to treat, whether curable or incurable; and although the latter be beyond the resources of his art as to permanent benefit, yet there are few cases where something cannot be done to alleviate suffering. One of our cases of aneurism, from which the individual suffered very much, but whose sufferings still derived some alleviation from narcotics, was placed under the care of a homœopathist, who of course began his treatment by impugning the diagnosis that had been given of the disease, denying that it was aneurism. In the next place, all other medicine must be laid aside, then the little white powder was to be dissolved in thirty-six tablespoonfuls of water, and of this one spoonful was to be taken every sixth hour. My patient was, of course, withdrawn from my care for a time; however, not for long, for at midnight of the second day I was sent for to see him, under a paroxysm of suffering so intense, as I had never before seen him in, although he had been several months under my care. By dint of Battley's sedative, after a considerable time, he got ease. I do not mean to charge upon the mysterious little white powder this unusually violent attack of pain, but I do charge it upon its being substituted for what did control and keep the pain within the limits of endurance—all that could have been expected from medicine under the circumstances. With the reservation of the pain, we consent to the equivocal character of every sign of aortic aneurism, except the external pulsating tumour. But let the pain be accounted for how it may, we know that it does exist under a special and exclusive character, and we are bound to say its beacon light has guided us more than any other to detect the disease.—Abridged from the *Dublin Journ. of Med. Science*, July 1842.

[Several most interesting cases of aneurism are detailed, which our limits prevent us from giving.]

ANEURISM OF THE ARCH OF THE AORTA BURSTING INTO THE ŒSOPHAGUS. BY R. BOYD, M.D., Resident Physician, St Marylebone Infirmary.

A stable man, aged 67, was suddenly seized in the workhouse with faintness, and pain in the stomach, and was immediately admitted into the infirmary; he recovered a little, but died the following morning quite suddenly, after taking some tea. For some weeks previous to this attack he had been subject to diarrhœa, which had considerably reduced him.

Autopsy, 29 hours after death.—*Head.* Arachnoid membrane thickened; brain very pale; about 1½ ounce of fluid in the lateral ventricles. *Chest.* There was a tuberculous deposit in the apex of the left lung with a small cavity in its centre; the lower lobe of the right lung was firmly adherent to the parietes, and in a state of chronic pneumonia, loaded with fluid resembling the juice of prunes; the left lung weighed 10 ounces, the right 16½. The heart was normal, and weighed nine ounces; the arch of the aorta was dilated, the inner coats of the vessel forming a ring, which could be felt by introducing the finger where it was separated from the heart. The dilatation included the origin of the innominata as far as the descending aorta, where the artery was again of the natural size. The dilated portion or sac of the

aneurism was firmly adherent to the œsophagus, which passed behind it, and they communicated by means of an oval opening one inch long, and half an inch broad, through which the blood escaped into the stomach, and caused the sudden death. The opening in the recent state was caused by the clot. The mucous membrane of the œsophagus was dark, and the tube itself very thin in the neighbourhood of the opening. *Abdomen.* The stomach was filled by a coagulum of blood which retained the form of that organ, and weighed 15½ ounces; a small quantity of blood was found in the duodenum, —some dark fetid fluid in the jejunum; about one-third of the ileum was firmly contracted, and contained scybalæ. The greater part of the colon was filled with a dark fluid similar to that in the jejunum. All the other organs were natural.—*Edin. Med. and Surg. Journal*, July 1842, p. 98.

Sudden Death during Coition.

Two cases of this kind have lately been communicated to the Medical Society of London,—one by Mr Linnecar, and the other by Mr Hutchinson. In both cases, death resulted from rupture of the basilar artery.—*Lancet*, April 24, 1841.

Case of Disease of the Pancreas. By W. B. Whitfield, Esq.

Mary Cattwood, aged 57, first applied to me on the 18th October 1841. She stated that about six weeks previous she experienced acute pain after severe exertion in carrying water up stairs. It lasted for several hours, but was mitigated by taking some aperient medicine, but never entirely ceased, and became in its character dull and aching, accompanied with a sense of weight. After this she lost flesh, became weak, and the abdomen increased in size. When she became my patient, the pulse was quick and feeble; the skin hot and dry; the abdomen felt tense, and was very much distended with fluid. No enlargement of any of the abdominal viscera could be detected. The chest appeared free from disease; and the urine, small in quantity, contained no morbid ingredients. She complained of a dull pain, with occasional sharper twinges in the umbilical and lower part of the epigastric regions, but there was very slight tenderness. Leeches relieved the pain. Hydragogue cathartics, after a fortnight's continuance, almost entirely removed the effused fluid. A hard cord-like swelling could be felt stretching across the umbilical region; it could be readily lifted like a glass from below, but was not moveable in a downward direction. Its largest extremity was imperfectly distinguished in the right hypochondriac region. At the time when the fluid was removed from the abdominal cavity by the cathartic treatment, vomiting began and continued to the day of her death. It was partially counteracted, however, by hydrocyanic acid and small doses of laudanum in milk. Blisters and iodine produced no benefit. She died on the 6th November.

Autopsy, 36 hours after death.—*Head and chest.* No marks of disease. *Abdomen.* The stomach, which was healthy, was very much distended, containing two quarts of a dirty brown fluid. The pancreas was very much enlarged, and felt hard; its head, from increasing size, pressed so much upon the duodenum and pylorus, as must have occasioned great difficulty in the passage of aliment from the stomach. Upon cutting through the cellular coat of the organ, it was found that its hardness depended entirely upon its cellular coat, as its internal structure was reduced throughout into a semi-purulent mass, resembling cream, in which no trace of the original structure could be found.

Remarks.—The pain, vomiting, and other symptoms were obviously owing

to the pancreatic affection. Pressure on the mesenteric veins is a sufficient cause for the effusion. The change of structure I attribute to chronic inflammation, terminating in softening and purulent infiltration.—Abridged from *Lancet*, June 25, 1842.

[This is obviously a case of inflammation of the organ; and the thickness and hardness of the cellular coat must have depended upon an effusion of coagulable lymph. In our Number for last April, we gave an interesting case of disease of the pancreas, as well as references to various sources of information on the pathology of this organ.]

SMALL-POX TWICE AFTER VACCINATION IN ONE CASE, AND ONCE IN FOUR OTHERS, MEMBERS OF THE SAME FAMILY. BY RICHARD RUGG, ESQ., Brighton.

A boy, three months old, was successfully vaccinated by me. Three months after, I again vaccinated him with matter taken, as in the first instance, from the arm of a very healthy subject; and this time he had a remarkably fine arm. Eighteen months after he had confluent small-pox, and, strange to say, twelve months after, almost to a day, he was again attacked with small-pox, which, as formerly, were confluent, and attended with very dangerous symptoms. Four other children of the same family, of ages varying from 8 to 17, have been attacked with the small-pox, though of a milder sort, after vaccination.—Abridged from *Lancet*, June 25, 1842.

CREASOTE IN NEURALGIA.

I have lately been in the habit of using the creasote prepared by Pelletier, (which is to be relied on,) in many neuralgic affections, more especially in tic douloureux, and invariably have succeeded in alleviating this very painful disease with it, in a very short time. The mode in which I order it is an ointment composed of ʒi to ʒi of lard. This is to be applied three times a-day to the part affected. In my opinion, the formula ordered in the Pharmacopœia Londinensis, is not sufficiently active in some kinds of neuralgia. —*S. R. J. in Lancet*, June 25, 1842.

ON A FORM OF SORE MOUTH PECULIAR TO NURSING WOMEN. BY DR HALE.

In several parts of the United States of America, this peculiar form of disease has been observed. It begins with a hard pimple upon the edge of the tongue, generally at a little distance from the tip, which is very red and extremely painful. In many mild cases, this continues a few days and disappears, and then returns again at irregular intervals. Those who have been frequently subject to these attacks, are aware of their approach by a loss of the sense of taste, and especially by being insensible to the taste of salt. In the severer forms of the disease, ulceration occurs in the tongue and cheeks, rarely on the gums and palate; and although each ulcer is of small extent, yet the inflammation runs over the whole mouth, and gradually extends to the mucous membrane of the intestines, producing diarrhœa. The appetite remains good, but the patient is unable to eat, from the pain it occasions her; her strength becomes exhausted, and emaciation takes place, but the milk continues abundant, and the child healthy and vigorous. Dr H. has never seen it in a first pregnancy. The most effectual cure for this disease is the weaning of the child. As soon as the infant is withdrawn from the breast, the sore mouth heals rapidly, and the diarrhœa, if not of long standing, soon gives way also. Dr Hale, however, is of opinion, that in all cases it is bet-

ter, if possible, to attempt the cure without weaning, as from his experience, the affection is more easily produced in a subsequent pregnancy in those women who have been obliged to give up nursing, than in those who have been cured without doing so. Gargles and washes seem to be of very little benefit. The treatment must be constitutional and tonic, and one of the best preparations which can be administered is the infusion of bark and lime water. Wine, however, does not agree. That this affection is not the effect of mere exhaustion of the system, from the demand made on it by the secretion in question, is manifest from the circumstance, that women of a vigorous constitution, and of good general health, are subject to it, as well as those who are feeble; while on the other hand, many whose constitutions are extremely debilitated, go through the whole period of pregnancy and nursing without any touch of it. It appears more rational to regard it as the effect of the local sympathies of the parts, and to be produced through the intervention of the stomach, which we know is so closely associated with the uterus.—Abridged from the *American Journ. of Med. Sciences*, April 1842.

On the Nitrate of Potassa in Asthma.

A correspondent of the *New York Medical Journal* states, that he has frequently employed with the greatest success, the nitrate of potassa in the paroxysm of asthma. The way in which he used it is as follows:—A piece of paper is dipped into a strong solution of the salt, and then hung up to dry, (in order to have the paper completely saturated, it is necessary to dip and dry it twice,) and at the approach of the fit, is either set fire to, or it is put into a pipe and smoked. The writer of the article says, that he has known some patients who were quite unable to breathe in the horizontal position, unless their bed-room was full of the vapour of the nitre.—*L'Examinateur Méd.*, 1st July 1842.

On Plica Polonica. By Dr Loewe.

The author says, that this disease, which was once very common in Upper Silesia, is now more rare, and has lost much of its severity. It is seen most generally in people of a Sclavonic origin, but it occurs from time to time among the other races, and is principally confined to the banks of the Vistula. He has not been able to ascertain correctly whether it is hereditary, contagious, or owing to scrofula, but when it does occur, it is most frequently seen in people of nervous temperaments. In one case which he mentions, the patient, a woman, was attacked with it after recovering from intermittent fever. Her hair was removed, but she was soon after seized with most excruciating pain over all her body, but more particularly in the extremities, the slightest touch on which caused great agony. Her skin was hot and dry. She had no appetite, and could not sleep. The pulse was frequent. The tongue was dry, and she had diarrhœa. Numerous blue spots appeared over the body, and the veins were remarkably distinct, and felt hard. She gradually sank. No post-mortem examination was made.—*Hufeland's Journ. der Practischen Heilkunde; Gazette Méd. de Paris*, 2d July 1842.

Gastritis from swallowing a Caustic Alkali. By R. Boyd, M.D., Resident Physician, St Marylebone Infirmary, London.

The patient was a female, aged 60. About two months previous to admission, she swallowed, by mistake, some American potass in solution, such as

is used by washer-women. She described it as producing, at the time, a burning sensation in the throat; and she has since suffered from tenderness of the epigastrium. Tongue red at the edges; irritability of the stomach continued with short intervals of intermission; latterly, she rejected all nourishment, and died in a most emaciated condition four weeks after admission.

Autopsy.—Head. Brain normal. *Chest.* Lungs slightly congested; no organic disease. *Abdomen.* About two inches of the liver, and of the œsophagus, and the whole of the inside of the stomach were highly injected with blood. There were traces of superficial ulceration of the mucous membrane—little appearance of thickening; weight below the average, being only four ounces.—*Edin. Med. and Surg. Journal*, July 1842.

CASE OF FECAL VOMITING DURING THIRTY-FOUR DAYS—POLYPUS OF THE INTESTINE—INTUS-SUSCEPTION AND RUPTURE. BY J. STEWART ALLEN, ESQ., Assistant Surgeon, Marylebone Infirmary.

Anna Regus, aged 38, was first visited on the 3d of February. She complained of severe but intermitting pain in the epigastric region, which was increased by pressure. She stated that her health was generally good, but that of late she had been obliged frequently to have recourse to purgative medicines. The pulse was not affected, nor was there any constitutional disturbance. Pulse 70. Tongue red, and rather dry. During thirty-four days, when she remained under treatment, she had vomiting of a fetid yellowish chalky matter. On the 12th February, the abdomen became covered with large round vesicles, or rather pustules. On the 9th March, a large patch of integument below and to the right of the umbilicus, became discoloured; it was in this region she complained most of pain. On the morning of that day, whilst sitting up in bed, she was suddenly seized with intense pain and shivering. When visited about an hour after, the pulse could not be counted, and was intermittent; abdomen tympanitic; extremities cold; countenance collapsed. Recourse was had to stimulants and sedatives, enemas of warm oil, mustard sinapisms, &c., but she never rallied, and died on the morning of the 10th March.

Autopsy, fourteen hours after death.—On opening the abdomen, there was an escape of fetid air, and a quantity of thin, frothy, fecal matter was found in the cavity. A small rupture was found in the lower part of the jejunum. The intestine for about sixteen inches was in a gangrenous state, and the finger could be readily pushed through its coats. Immediately below the rupture in the intestines, and occupying its whole calibre, was a solid fleshy substance, about three inches in length; it had grown from the mucous membrane by a very narrow neck; when cut into, it presented a firm fibrous appearance. The polypus or tumour, from its weight, had dragged down a considerable portion of intestine, forming intus-susception. The liver was enlarged, but the other abdominal viscera were healthy. The gangrenous portion of the intestine was lying in contact with that part of the abdominal parietes where the discoloured patch had been observed during life.—Abridged from *Lancet*, June 4, 1842.

ON THE INFLUENCE THAT DISEASES OF THE RESPIRATORY ORGANS HAVE ON MENSTRUATION, AND THE EFFECT THAT THAT EVACUATION EXERCISES ON THESE AFFECTIONS. BY DR RACIBORSKY.

The following are the conclusions to which the author comes in regard to the effect of acute pulmonary disease on menstruation, and of that discharge on it:—

1*st*, That acute inflammation of the respiratory organs in general, has no

effect on the menstruation, and that in the majority of cases the catamenia appear as usual, at the commencement of these diseases.

2d, In the cases in which inflammation attacks the chest, shortly after the menstrual period, the catamenia may be altogether wanting at the next period, or if they do appear, be much diminished in quantity; but that this result ought not to be attributed to the disease, but to the blood-letting and low diet which have been had recourse to. The same is seen in all those affections in which a similar treatment has been pursued.

3d, When menstruation occurs during an inflammatory attack of the chest, it has no effect on that disease, and consequently we should not endeavour to promote or hasten the return of the menses, with a view of alleviating that complaint. Some authors, it is true, and particularly Forestus,[1] and more recently M. Andral,[2] have cited cases, in which inflammation of the respiratory organs terminated favourably, immediately on the appearance of uterine hemorrhage. But as M. Andral remarks, we must be careful not to confound this uterine hemorrhage, which is really a critical discharge, with the true menstrual fluid, for which it has often been taken, as having had great influence in different diseases.

4th, That the suppression of the menses, which has been occasioned from bleeding in acute inflammatory diseases of the chest, has never been followed by any bad result, and that consequently, the presence of the catamenial fluid ought never to be any contra-indication to venesection when it is thought necessary.

The effect of chronic pulmonary complaints, as phthisis, emphysema, and chronic cataract, on menstruation, is very different. In the first of these diseases, amenorrhœa is almost always produced, whilst in affections purely catarrhal, it seldom or never takes place. This distinctive character may serve as a means of diagnosis in those cases in which the physical signs are insufficient to decide the question.—Abridged from *Gazette Méd. de Paris*, 25th June 1842.

Destruction of a part of the Walls of the Stomach, and the Aperture formed thereby filled up by the Pancreas. By M. Gintrac.

Perforation of the stomach is by no means rare, but we publish this case, as the ulceration seems to have taken place from inflammatory and not from cancerous action. A man, 50 years of age, of a moderately robust constitution, had complained for ten months of abdominal pains and constipation, imperfect digestion, and vomiting after food. The matter ejected was of a brownish colour, like the grounds of coffee, and was more or less mixed with a dark fluid. The stools were very fetid. He became greatly emaciated, and sank after repeated attacks of diarrhœa. At the post-mortem examination, nothing abnormal was found in the chest. There was redness at each extremity of the stomach; at the posterior part of the small curvature, was an ulcerated spot, or rather a complete aperture, round, and about five centimetres in diameter, the edges of which appeared cicatrized, but of a brownish-red colour. The pancreas, which was attached to the stomach, completely filled up the opening, thus preventing the effusion of the alimentary matter into the abdominal cavity; that portion of the pancreas which acted as the plug, was hard, thickened, swollen, and somewhat white. One of the divisions of the canal of Uirzungus opened through the pancreas, on a level with the ulceration. The liver was large, of a pale colour, but healthy; it was attached to the stomach by a firm adhesion of a dense tissue, which grated under the scalpel. The spleen was small and soft. The intestines were full

[1] Lib. i. obs. xx. et lib. xvi. obs. xxxv. [2] Clin. Méd. 3d edit. tom. iv. p. 417.

of a black matter; the mucous membrane was healthy, but in several spots it was raised by air, which could be easily displaced from one part to another.—*Journ. de Méd. Prat. de Bourdeaux; L'Examinateur Med.*, 12th June 1842.

RAMOLLISSEMENT OF THE BRAIN. By WM. ALEXANDER, M.D., Dundonald.

John Smith, aged 11, of spare habit and sallow complexion, for eight months complained occasionally of headache, chiefly referred to the forehead, which increased in severity during the five weeks preceding death, coming on in paroxysms of short duration, with intervals of two or more hours, though never entirely free from pain. When free from a paroxysm, he walked about, and amused himself with his companions; latterly he became inactive, his gait constrained, carrying his head steadily as if fearful of moving it; attended school regularly till within eight days of his death, and had never been confined to bed an entire day; appetite good, but had *vomited*, immediately after his meals, for fourteen days before death; bowels confined, with occasional griping pains: urine scanty, and high coloured.

I was called to see him for the first time on the 3d of July 1841, and found that he had shortly before vomited some blood, mixed with mucus and bile, and was standing holding his head with both hands, complaining of great pain in the forehead, which abated in a few minutes; the face was much flushed, but became pale, with an expression of sadness on the cessation of the pain; the eyebrows were contracted; the eyes dull and heavy; the pupils dilated, but contracting to the light of a candle, and the upper eyelids relaxed; heat of skin natural; pulse 70, and firm; much throbbing of carotids; no secretion from nostrils; the Schneiderian membrane redder than natural; tongue white, and no thirst. Has had no medicine, except a few "worm powders." Ordered the head to be shaved, six leeches to be applied, and four grains of calomel at bed-time.

The calomel was given, and operated twice, after which the headache and vomiting ceased. The father did not think it necessary, therefore, to shave the head or apply the leeches; and on the 4th took him to a neighbouring town. On the 5th he again took him to a town five miles distant; he seemed to enjoy himself, walked all the way home, having had only one paroxysm of headache, and vomited once during the day. During the night he became restless, and complained of headache, but slept towards morning; a few minutes before eleven A.M., he awoke complaining of the headache; a little girl only being in the house, went out to apprise his father, but before he arrived, the boy had expired, apparently in entire possession of his faculties.

Inspection, forty-six hours after death.—No emaciation; countenance placid.

Head.—The sinuses of the dura mater gorged with a dark-coloured fluid blood. That portion of the arachnoid lying over the middle lobes of each hemisphere showed several opaque spots. The pia mater was unusually vascular, and its vessels contained numerous bubbles of air. The convolutions much flattened; the cineritious matter of a pinkish hue; the medullary matter, when cut into, presented an immense number of bleeding points.

The ventricles contained three and a half ounces of a limpid fluid. The choroid plexuses were firm and vascular, and did not present the usual blanched appearance when fluid has been present. The whole floor of each lateral ventricle, and a small portion of the anterior lobe of the right hemisphere, were in a complete state of ramollissement, the parts being reduced to a greyish-coloured pulpy mass; the other parts of the cerebrum were healthy. The left lobe of the cerebellum was healthy. On cutting into the right lobe, it was found to consist of an apparently healthy shell, as it might be called, varying from a quarter to half an inch in thickness, the central substance being reduced to the consistence of pus; and imbedded in this was a tubercle as large as a walnut, rather oblong, nodulated, and grey in colour, the exter-

nal covering resisting the knife; internally it presented no trace of organic structure, and resembled the medullary matter of healthy brain. The corpus olivare of the right side was much enlarged and firm. The medulla oblongata very firm. A considerable serous exudation in the spinal sheath: other organs not examined.

The absence of severe symptoms, and the sudden dissolution, are the points worthy of observation in this case. The headache and vomiting were the only symptoms, showing that a guarded prognosis ought to be given when they are present in anomalous cases. The experiments of Flourens, Serres, Magendie, Bell, and others, would lead us to expect that such a state of brain would produce either vertigo, convulsions, rigidity of extremities, strabismus, optical delusions, blindness, deafness, impaired or increased sensibility of skin, aphonia, loss of muscular power, aberration of mind, yet one and all were absent; and we have seen that the patient continued at school till a few days before death, and on the night before his death walked five miles. I might extend this paper by reasoning on these physiological observations, but it would be an unsatisfactory labour; and although from the acknowledged talents of the observers, I cannot say, "experientia stultorum magistra," still this and similar cases show that we have as yet scarcely begun to deduce correctly the morbid state of the brain and nervous system from symptoms during life.—*Lancet*, May 21, 1842.

SURGERY.

THE MINER'S ELBOW. BY EDWYN GURNEY, Esq. of Camborne, Cornwall.

I notice that Mr Chance, at the Westminster Medical Society, on April 2, makes the following remark, namely, that "he had met with a fluctuating tumour at the posterior part of the elbow-joint. He opened it with a lancet, and found it to be a serous cyst; it refilled, but after opening it a second time, the fluid had not again collected." In the mining district in which I am situated, this fluctuating tumour at the posterior part of the elbow-joint is of frequent occurrence, in consequence of the narrow passages the miner has occasionally to pass through, in ascending from, and descending to, and sometimes to work in; the posterior part (or cap) of the elbow-joint is bruised, in consequence of which the bursal sac becomes inflamed, and an effusion of serum follows. To this tumour I have for several years past given the name of "the miner's elbow," its cause and its treatment being the same as the "housemaid's knee," which is simply this: in the early stage, tepid bathing with water, and a warm bread-and-water poultice, three times daily; and after this has been applied a few days, and the inflammatory action subdued, the dispersion of the fluid should be accomplished, either by the application of about half a drachm of the hydriodate of potash and iodine ointment combined, or of a lotion of two drachms of tincture of iodine to an ounce of rectified spirits of wine; to be used in drachm applications over the tumour three times a-day. The same treatment will cure the housemaid's knee—a complaint to which miners, from occasionally being obliged to kneel during their labour, are very liable. I have seen several cases where this fluctuating tumour at the elbow-joint (miner's elbow) has burst, and from neglect, a fistulous opening into the sac had been the result, in which nothing could be done but laying open the sac by a crucial incision, and causing granulations to spring from the bottom of the sac, to consolidate the whole.

At page 191 of the first report of the commissioners for inquiring into

employment in mines, presented last week to the House of Commons, the following passage occurs, (ED. L.):—

"790. The sub-commissioner for the Forest of Dean gives the following account of a painful disease of the joints, common in that district:—'The men employed in cutting down the coal are subject to inflammation of the *bursæ*, both in the knees and elbows, from the constant pressure and friction on these joints in their working posture. Where the seams are several feet thick, they begin by kneeling and cutting away the exterior portion of the base. They proceed, undermining, till they are obliged to lie down on their sides, in order to work beneath the mass, as far as the arm can urge the pick, for the purpose of bringing down a good head of coal. In this last posture the elbow forms a pivot, resting on the ground, on which the arm of the workman oscillates as he plies his sharp pick. It is easy to comprehend how this action, combined with pressure, should affect the delicate cellular membrane of the joint, and bring on the disease indicated. The thin seams of coal are, necessarily, altogether worked in a horizontal posture.'"—*Lancet*, May 21, 1842.

PUNCTURE OF THE BLADDER.

M. Mondière has given, in the *Révue Médicale* (April 1841), the following interesting statistics of ninety-two cases of puncture of the bladder:—

Puncture.	No. of Cases.	Success.	Fistula.	Infiltration.	Abscess.	Hemorrhage.	Death.
Perineal,	9	6	1	0	0	1	1
Recto-Vesical,	28	19	3	3	1	0	2
Hypogastric,	55	49	0	0	0	0	6
Total,	92	74	4	3	1	1	9

EXTIRPATION OF THE PAROTID GLAND. BY M. LARREY.

M. Larrey communicated to the Academy of Sciences (August 9, 1841), the case of a girl, nineteen years of age, in whom the lymphatic ganglions of the neck formed a tumour, which occupied the whole space between the left clavicle and the jaw, extending in front of the ear into the parotid gland, and into the cheek of the same side. After effecting the resolution of the tumour by the actual cautery, moxas, mercurial frictions, &c., a treatment which continued for two years, M. Larrey then removed the parotid gland, which exhibited all the signs of the cancerous degeneration, and the patient was perfectly cured.—*Examinateur Médicale*, Aug. 15, 1841.

GREEN CATARACT. BY M. H. CUNIER.

M. H. Cunier, in a report of the diseases treated at the Ophthalmic Dispensary of Brussels, invites attention to this form of cataract, which is often confounded with glaucoma, and the unfortunate patients thus abandoned to darkness. Dr C. says that he has met with eight cases of this kind. The individuals laboured under green cataract, which had been mistaken for incurable glaucoma. Seven of these patients were operated on, and were restored to sight.—*Examinateur Médicale*, Sept. 12, 1841.

ENTROPION CURED BY THE SUBCUTANEOUS SECTION. BY DR NEUMANN.

Mathias Zacharsi, eighteen years of age, was affected with entropion of the upper and lower eyelids of both eyes, the result of frequent attacks of scro-

fulous ophthalmia. From the constant irritation of the eyelashes, the cornea of the right eye had become quite opaque, and only a small portion of the left one remained transparent. The patient could hardly see anything. In order to benefit his sight, if possible, Dr Neumann performed the following operation: At half-an-inch from the external angle of each eye a small tenotome was inserted, and carried on to the internal angle; the cutting edge of the knife was then turned downwards, and the levator palpebrae and other tissues divided. To prevent the globe of the eye from being injured, a thin plate of horn was placed between it and the eyelid. The muscles of the inferior eyelid were cut in a similar manner, the knife being entered at the puncture in the temple, made for the division of the muscles of the upper eyelid. The eyelashes regained their normal direction. In the left eye the operation was quite successful, but it had to be repeated on the right in three weeks. The sight of the left eye was completely restored, but only very slight improvement took place in the right, on account of the great opacity of the cornea.— *Wochenschrift fur die Gesammte Heilkunde; Gazette Méd. de Paris*, July 2, 1842.

FORENSIC MEDICINE.

Orfila's Researches on the Absorption of certain Mineral and Vegetable Acids and Metallic Salts.

M. Orfila has conferred another great boon on the student of toxicology. Subjects of doubtful controversy—questions, the determination of which was of great importance both in relation to forensic medicine and therapeutics, have been recently elucidated and resolved by this celebrated experimentalist. We allude especially to his researches, which have determined the absorption of the mineral acids, when introduced into the stomach in a concentrated form, and the absorption of certain metallic salts.

Acids.—The first experiment on the absorption of nitric acid administered in the dilute form, may be rather fully stated, in order to enable our readers to comprehend the course followed in other experiments.

Eight grammes[1] of strong nitric acid, dissolved in two hundred grammes of water, were introduced into the stomach of a dog of middle size, who had eaten and drunk three hours before; the œsophagus and penis were tied. The animal died six hours after the operation. The liver and spleen, cut into small pieces, were treated for an hour with boiling water, and ten centigrammes[2] of pure potass. The liquid separated by decanting, was introduced into a retort, and heated with eight grammes of pure sulphuric acid. Distillation was carried on, until a third of the liquid only remained in the retort. The product was colourless, transparent, reddened litmus strongly, but did not redden the yellow sulphate of narcotine, nor alter the colour of the acid protosulphate of iron. It was saturated with potass, and evaporated to dryness. The residue did not deflagrate when put on red hot charcoal; treated in a glass tube with sulphuric acid and copper filings, it furnished no ruddy fumes, and the gas which it disengaged only yellowed the solution of acid protosulphate of iron, through which the vapours were transmitted.

The bladder contained eighty grammes of urine, rather strongly acid. This liquid directly reddened the acid yellow sulphate of narcotine, and made

[1] The gramme is 15·434 Troy grains.

[2] The centigramme is equal to ·1543 of a Troy grain.

the protosulphate of iron brown. This brown hue passed suddenly to violet on the addition of a sufficiently large quantity of concentrated sulphuric acid. Seventy grammes of this urine being distilled with six grammes of pure sulphuric acid, nitric acid diluted was obtained in the receiver, as was sufficiently evident on application of the usual tests to the product. The stomach was not perforated, and enclosed one hundred grammes of a thick blackish fluid.

The second experiment shows that nitric acid dissolved in a mixture of soup, milk, and coffee, and introduced into the stomach of a dog, was absorbed and passed into the urine.

In the third experiment, the same dose as that given in the first experiment, similarly diluted, was administered in like manner to a dog. The animal died at the end of an hour. The stomach was perforated. The liver and spleen furnished no trace of the acid, which in this case was also found in the bladder.

A dog, which had fasted for twenty-four hours, had two grammes of pure and concentrated nitric acid introduced into the stomach, the œsophagus and penis being tied as usual. Thirty hours after the operation, the animal was hung. The presence of the acid in the bladder was determined, although some of the tests did not give decisive results. The same experiment was repeated with three grammes of the acid. Death took place in fifteen hours; there was no proof of absorption.

A wound being made, five grammes of the concentrated acid were introduced into the cellular tissue on the internal part of the thigh of a dog; the penis was tied, as in the experiments where the poison was introduced into the stomach. The edges of the wound were secured by suture. In seven hours and a half, as the edges of the wound had become open by the action of the acid, the animal was hung, when nitric acid was found to have passed into the urine. Repetition of this experiment was performed, with the difference of the acid being introduced in the neck. No absorption took place.

M. Orfila now endeavoured to ascertain if any acid could be generated internally, and carried into the urine, in circumstances similar to those existing in his experiments. For this purpose, he introduced mixtures of various articles, as soup, milk, coffee, serum of the blood, into the stomachs of dogs where the penis and œsophagus were tied. The animal being hung some hours after, search was made in the bladder, liver, and spleen, for nitric acid. The result showed, that although the urine in these cases gave reactions with some tests, not dissimilar to those indicative of the existence of nitric acid, none of this acid was obtained on distillation of the urine with sulphuric acid. Other experiments showed that the same characters are possessed by the normal urine of dogs.

Orfila now proceeds to the consideration of the absorption of hydrochloric acid. In his eleventh experiment, three dogs were poisoned with sixteen grammes of muriatic acid dissolved in a mixture of three hundred grammes of milk, soup, and coffee. No absorbed muriatic acid was contained in the liver and spleen; nor could any conclusions be formed as to the existence of the poison in the bladder of the animals. He now made a quantitative estimate of the combined hydrochloric acid normally existing in the urine of dogs, from which he could show in the case of a dog poisoned by the introduction of two grammes of concentrated hydrochloric acid into the stomach, that the acid had passed into the bladder. In this case, there was no perforation of the stomach. In another similar experiment, where three grammes of the concentrated acid were administered, there was slight perforation; the bladder carefully removed, was found to have more hydrochloric acid among its contents than should have been normally present. In other experiments, with the dilute acid where absorption took place, results were obtained confirmatory of the method of procedure employed.

The absorption of concentrated muriatic acid introduced into the cellular tissue under the skin, is proved by two experiments. In both cases, the poison was found only in the bladder.

By a similar quantitative estimate of the acid of combined sulphates, in the normal urine of dogs, and of the sulphuric acid found in the urine of animals experimented on, Orfila has determined the absorption of this acid, whether introduced into the stomach in the dilute or concentrated form. In one case, there was some doubt whether the liver and spleen of a dog contained any absorbed sulphuric acid; for on agitating the decoction of these organs evaporated to a sixth, with sulphuric ether, and evaporating the ethereal fluid, a residue was obtained, which, dissolved in distilled water, gave a slight precipitate with chloride of barium.

The absorption of oxalic acid is not established by the researches of M. Orfila, who refers to the experiment of Woehler, related in the *Journal des Progrès* for 1827. In this case, the addition of nitrate of lime to the urine of a dog poisoned by the introduction of oxalic acid into the stomach, gave rise to a copious precipitate of oxalate of lime.

M. Orfila's researches on the absorption of acetic acid, only render it probable that this acid may pass into the urine.

We may conceive, that at an early stage of the action of an acid poison, the acid may exist in the viscera, viz. in the heart, liver, &c.

Henceforth, where poisoning by a mineral acid is suspected, the medico-legal experimentalist must be prepared to look for the poison in the internal viscera, and especially in the urine, if evidence of its existence in the intestinal canal be not obtained. For this purpose, he must make a quantitative estimate in the case of hydrochloric or sulphuric acid, and state whether or not the proportions, if any be discovered, exceed the healthy standard.

In cases where the concentrated acids are absorbed, they are probably previously diluted with the animal fluids.

Salts of lead, bismuth, tin, gold, silver, zinc, and mercury.—To save space, we shall preface this part of our notice with some of the remarks of M. Orfila, made at the conclusion of that part of his memoir which relates to all the metals above mentioned, except the last. "We see that the process to be followed for detecting the salts of lead, bismuth, tin, silver, gold, zinc, and iron, which have been absorbed and carried into the different organs, is nearly the same. It is necessary to boil the liver, spleen, &c., sometimes with distilled water, sometimes with water slightly acidulated; to evaporate the decoction to dryness; to carbonize the product by nitric acid, and to treat the coal by this same acid, or sometimes by muriatic acid, or *aqua regia*. Sometimes it is true that I have carbonized the viscera at once, without having submitted them to the action of boiling water. We should have recourse to this liquid, and act only on the decoction, whenever we seek for other metals than gold and silver, because we thus avoid the complications which might arise from the copper and lead which exist *naturally* in our tissues. In fact, if the viscera were carbonized directly by the concentrated nitric acid in these cases, and especially if the coal were heated to a red heat for some time, to free it from organic matter, and incinerate it in part, we should infallibly dissolve a certain quantity, if not the whole of the normal lead and copper in the acids ulteriorly employed. This inconvenience is not to be dreaded, when we carbonize directly in cases of poisoning by the salts of silver and gold, because the former of these salts is separated by muriatic acid, which does not precipitate the dilute solutions of copper and lead, and because the gold, not being attacked by nitric acid, can be easily separated from the nitrates of copper and lead, which might be formed by the action of this acid on the normal copper and lead."

In the processes followed with the salts of all the metals except mercury,

he has always preferred the nitric to the sulphuric acid, as a means of carbonization.

"It is necessary, for the success of these operations, not to incinerate the coal obtained by the action of the nitric acid, because then the lead and copper which exist normally in our tissues, would be dissolved by the action of the acid, and it would be necessary to have recourse to complicated processes, in order to separate the metals which are the subject of this paper."

Salts of Lead.—The existence of lead in the spleen and liver of a dog poisoned by the introduction of nitrate of lead into the stomach, was shown by boiling the viscera cut into pieces, in water acidulated by acetic acid, evaporating the decoction to dryness, and treating the carbonized residue with nitric acid and heat, and applying the test of sulphuretted hydrogen to the extract. Boiling water alone did not remove the lead from the viscera. The presence of lead in the urine of the same animal, was easily shown by a similar process. The coats of the stomach were likewise found to contain the poison. Orfila shows that by *incinerating* the coal obtained from the carbonization of the viscera by nitric acid, and then treating the incinerated mass by the acid, (instead of so treating the *unincinerated coal*,) the normal lead of the viscera is extracted. Sometimes where the coal was not incinerated, and was obtained, in this case it was derived from the *filter*. When a paper containing either lead or copper must be used, the metal must be removed by washing the filter with dilute acetic, muriatic, or sulphuric acid. But in such a case, some other means of filtering had better be employed.

The process for detecting the salts of bismuth, comes under the general description. The absorption of the *nitrate* from the stomach into the viscera and urine was satisfactorily proved.

Salts of Tin.—The livers and spleens of dogs into whose stomachs the protochloride had been introduced, were cut into pieces, and digested for an hour in a porcelain vessel with water acidulated by hydrochloric acid; the decoction was evaporated to dryness, and the product carbonized by pure and concentrated nitric acid; the coal was treated at a high temperature for twenty minutes, with a mixture of twenty parts of muriatic acid, and one of nitric acid. The solution thus obtained was evaporated to dryness, and the residue treated with muriatic acid diluted with two parts of water; the solution filtered, and having sulphuretted hydrogen passed through it, gave the yellow sulphuret of tin. By a similar process, evidence of the presence of tin in the urine of the animals was obtained, also of the existence of the metal in the coats of the stomach.

No evidence of the absorption of silver can be obtained, by leaving the viscera of animals, poisoned by the nitrate, for twenty-nine hours in solution of ammonia, and then testing the liquid. But the carbonization of the organs in nitric acid by the usual method, and the treatment of the coal by boiling dilute nitric acid, extracts the silver, which may then be easily tested. A similar process serves to extract this metal from the urine.

A dog had twelve grammes of the chloride of gold dissolved in two hundred grammes of distilled water, introduced into his stomach, the œsophagus and penis being tied as usual. In twenty-four hours he was hanged. The spleen and liver being carbonized by nitric acid, left a coal which, on being maintained at a red heat for twenty or twenty-five minutes, in a porcelain capsule, showed scales of metallic gold among its ashes. In order to show the presence of gold in the urine, it was only necessary to evaporate the urine to dryness, carbonize the residue by heat, exhaust the resulting mass by water, and pass sulphuretted hydrogen through the solution, in order to produce a precipitate of the sulphuret of gold, which being washed, and treated with boiling nitric acid, leaves metallic gold with all its properties. Gold may be shown to exist in the coats of the stomach, either by treating parts

of the organ previously well washed, with *aqua regia*, when gold will be found in solution, or by carbonizing with nitric acid, and heating the coal so as to obtain particles of metallic gold.

Zinc may be shown to exist in the viscera in cases where the sulphate has been introduced into the stomachs of dogs, by carbonizing the organs by nitric acid, and treating the product with muriatic acid; thus a solution of muriate of zinc was obtained, which being neutralised, or nearly so by potass, gave the white sulphuret of zinc on being treated by the sulphuretted hydrogen test.

M. Orfila states, that the researches made up to this time, in order to discover corrosive sublimate in the organs of animals poisoned by this substance, have been fruitless. He has failed like others in obtaining mercury from the urine of patients using mercurial frictions, by the process of M. Cantu.

Many distilled oils, syrups, gum, tea, &c., give precipitates from solutions of corrosive sublimate; these precipitates heated with potass yield metallic mercury; the same is the case with the precipitates furnished by many of the animal fluids with solution of corrosive sublimate. In these cases, although the supernatant liquids may contain corrosive sublimate, they do not react with tests like an ordinary aqueous solution of this substance. M. Orfila has established that the precipitate formed by corrosive sublimate in white of egg is soluble in excess of the white of egg. He admits that Lassaigne has succeeded in proving this to be a compound of corrosive sublimate and albumen. Nevertheless he is inclined to think that a different compound is formed by the action of corrosive sublimate on the animal tissues; as from the stomach of a dog poisoned by corrosive sublimate, he could not separate this substance by the process of Lassaigne, although by another method he succeeded in finding mercury in the organ.

First experiment with corrosive sublimate.—M. Orfila here shows that on dissolving the fresh prepared and moist coagulum of corrosive sublimate and white of egg, well washed, in solution of chloride of sodium, ether agitated with the fluid will remove the sublimate, so that its presence can be ascertained by the ordinary tests.

Second experiment.—He failed in obtaining corrosive sublimate by a similar process from the stomach of a dog poisoned by this substance.

Third experiment.—He likewise failed in obtaining evidence of the presence of mercury in the viscera of a dog poisoned by corrosive sublimate, by acting on the liver, spleen, and evaporated urine by hydrochloric acid and chlorine.

Fourth experiment.—Here the presence of mercury in the stomach of an animal, poisoned by the sublimate, was made manifest, on heating the organ in a mixture of three parts muriatic to one of nitric acid, and treating the liquid obtained by gaseous chlorine passed through it, and then by the proper tests. By a similar process was mercury obtained from the liver and spleen.

Fifth experiment.—The most successful process for detecting mercury in the tissues, in cases of poisoning by the sublimate, appears to be furnished by carbonizing the viscera in close vessels with a sixth of concentrated sulphuric acid, mixing the volatilized matters and coal, and treating them with aqua regia, and then proceeding as in such cases with other metals.

Sixth, seventh, and eighth experiments.—He was unsuccessful in finding mercury in the blood of dogs taken two hours, twenty minutes, or five minutes after the introduction of corrosive sublimate into the stomach; and this in cases where the poison had passed into the viscera.

Ninth experiment.—He obtained corrosive sublimate from the urine of a dog poisoned by this substance, by exposing this excretion to the action of gaseous chlorine transmitted through it, evaporating to dryness by the heat of a salt water bath, acting on the residue with distilled water, which ex-

tracted the sublimate, and on exposing the extract to the action of copper, the presence of mercury was apparent.

M. Orfila easily succeeded in obtaining evidence of the existence of mercury in the urine of patients undergoing mercurial treatment, by means of processes similar to those already described, although he failed by the process of M. Cantu. He believes that the presence of mercury may yet be made evident in the saliva and milk of patients under the influence of mercurial treatment.

Want of space prevents us from adverting to all the important conclusions which may be drawn from the researches of M. Orfila on corrosive sublimate; but we shall briefly mention some of their applications to legal medicine.

1st, The medico-legal inquirer must in future extend, in many cases, his researches beyond the contents of the alimentary canal in cases of suspected poisoning by corrosive sublimate; and be prepared to analyse the viscera and the urine. 2d, This task should only be undertaken by an expert manipulator. 3d, The existence of corrosive sublimate in the organs of a person suspected to be poisoned, neither shows that the general suspicion is well founded, nor that corrosive sublimate was the poison employed; for these two difficulties arise:—corrosive sublimate may have been given as medicinal; and, according to the researches of M. Mialke, many compounds of mercury are susceptible of being changed into corrosive sublimate under the influence of the electro-positive chlorides, such as those of potassium and sodium which exist in the body, or under the influence of muriatic acid. "The *protoxide*, the *protoacetate*, the *prototartrate*, and the *mercury of Hahneman* are in this condition. The *protonitrate* gives less than calomel. The *protoioduret* requires the contact of oxygen to be transformed, and furnishes scarcely as much sublimate as the protochloride. With *metallic mercury* little sublimate is obtained unless oxygen, an elevated temperature, and a concentrated solution of an alkaline chloride be present. The *sulphuret of mercury* gives still less sublimate than metallic mercury. The *binoxide* produces nearly ten times as much as the protochloride; the *binoduret* furnishes still more; the *cyanuret* rather less; the *soluble salts* of the *binoxide* and the *cyanide* are entirely changed into the sublimate."

R. M. G.

PERIOD OF GESTATION.

On a recent trial for seduction, the female swore to a single connection on the 16th October 1840. The child was born on the 4th of August 1841, being 41 weeks and four days afterwards. The mother was 16 years old on the 11th of April 1841.—*American Journal of Medical Science*, April 1842.

PART FOURTH.

MEDICAL NEWS.

FRENCH ACADEMY OF MEDICINE.

12th April.

1. *Nomination.*—The president announced the names of the commission charged with drawing up the scheme, to be submitted to the Minister, for the appointment of an order of travelling physicians. The members are MM. Adelon, H. Roger, Collard, Chomel, Rayer, Double, Cloquet, and Pariset.

2. *Improvement of the Breed of Horses in France.*—A renewed discussion took place upon the memoir of M. Hament, which appears to have excited much interest in the Academy. Various members expressed their opinions at considerable length.

19th April.

1. *Improvement of the Breed of Horses in France.*—The discussion upon this subject was again resumed, and terminated in a nearly unanimous resolution to transmit the last memoir of M. Hament, together with an abstract of the debate in the academy, to the Minister of State.

2. *Operation for Imperforate Anus in a Child.*—M. Amussat exhibited an infant on which, three days after birth, he had formed an artificial anus in the left lumbar region. The rectum was imperforate from birth, at such a distance from the anus, (which was quite well formed), that it was found impossible to reach the intestines with a trocar in the usual manner. It therefore became necessary to form an artificial anus, which was effected by an opening made in the lumbar region, a method which M. Amussat has adopted with great success in the adult. According to him, infants are the most favourable subjects for this operation, as in them the lumbar portion of the colon has its posterior half quite free of peritoneal covering, whereby the operator is enabled to avoid the risk of wounding that membrane. The infant was now nearly three months old, and in the enjoyment of perfect health.

26th April.

1. *Absorption of various Poisons.*—M. Orfila, in a letter addressed to the Academy, states, that he has found, on experiment, 1. That the sulphuric, nitric, muriatic, and oxalic acids, diluted with water, are absorbed, and can be detected in the urine. 2. That these acids are absorbed, even in their greatest state of concentration, inasmuch as they become diluted by the secretions they give rise to, the moment they come into contact with the interior of the digestive canal. 3. There is no doubt of the absorption of the salts of lead, bismuth, tin, zinc, gold, and silver, inasmuch as these metals are to be detected in the urine of dogs poisoned by them. The mode of obtaining these metals is very simple, being merely the treatment, by aqua regia or nitric acid, of the viscus previously charred by nitric acid. 4. The salts of mercury are absorbed in like manner, and conveyed by the blood into all the organs. This can be shown by dissolving the viscera of an animal poisoned by them in aqua regia, and passing through the solution a stream of chlorine gas, or what is even better, by charring them in close vessels, by means of a strong acid, and then treat-

ing the charred parts with boiling nitro-muriatic acid. 5. He has also found in the viscera, particularly in the liver and in the urine, a portion of the iodine, liver of sulphur, nitrate of potass, alum, sal ammoniac. These observations complete M. Orfila's researches on the absorption of poisons, derived from the mineral kingdom. [*A pretty full account of them is given in the Periscope*, p. 859.]

2. *Medical Topography.*—M. Double presented a work on the medical topography of the Département du Nord, by M. Cazeneuve, surgeon at Lille.

3. *Vaccination.*—M. Gauthier de Claubry read the report of the committee on vaccination for the year 1840. It appears that during the year there had been 525,509 vaccinations on 836,789 births. Of 45,060 vaccinations, the result of which is known, 44,179 had succeeded, and 881 had failed, and in two cases pustules had appeared over the body, the fluid of which had been found capable of giving rise to the normal vaccine vesicle. The committee had received information of 14,470 cases of epidemic small-pox, of the subjects of which 1390 remained disfigured, and 1668 died. There had been 24 second attacks of the disease, followed by death in three cases. By far the greater number of these previously vaccinated had escaped this epidemic, but 406 persons had been attacked by a varioloid disease, generally slight and of short duration, of which, however, four persons had died. There had been 2214 re-vaccinations, of which 1704 had failed, 227 had produced false vesicles, and in 270 there were secondary vesicles of normal appearance. Three persons re-vaccinated with success, had nevertheless been attacked by the varioloid disease. The general conclusions of the report, as finally sanctioned by the Academy, after some discussion, are, 1. Vaccination preserves from variola, but such preservation is not absolute in all cases—a small number of those vaccinated remaining exposed to an eruption, commonly denominated "varioloid disease." 2. This eruption, though of the nature of variola, is usually slight, and unattended with danger. During the year 1840, the deaths from it had been as 1 in 101, while those from variola had been as 1 in 8¼. 3. A previous vaccination destroys the susceptibility to a second one, as well as to small-pox. In some subjects, however, this susceptibility is revived at the expiration of a certain interval. 4. The most perfect success of re-vaccination is no guarantee to all subjects indiscriminately against the chance of a subsequent attack of small-pox. 5. In general, variola attacks the same person only once; there are, however, some subjects whom this does not protect against a second attack, which may possibly be no less severe than the first.

3*d May.*

Influence of the Neighbourhood of Cemeteries upon Health.—The Minister of the Interior proposed to the Academy the following questions: 1. Is the state of the public health liable to become sensibly affected in consequence of the neighbourhood of cemeteries? 2. Is it therefore desirable to place them at a distance from towns and inhabited places in general; and if so, what distance ought there to be between the cemetery and the nearest town or village? 3. And, as a subsidiary question, is there danger or not in permitting embalmed bodies to be deposited in churches? A committee was appointed to investigate the subject.

10*th May.*

Election of a member to the section of medical pathology.—The candidates were MM. C. Broussais, Gibert, Jules Guérin, Mélier, Nonat, and Prus. There were present 121 members. The result of the first vote was as follows:—J. Guérin, 43; Mélier, 24; Prus, 21; Broussais, 14; Gibert, 10; Nonat, 7; Bayle, 1; and there was put into the ballot box one blank billet. None of the candidates having obtained a majority, a second vote was taken, when the following result was obtained:—J. Guérin, 53; Mélier, 35; Prus, 19; Broussais, 9; Gibert, 2; Nonat, 1; and two blanks. M. J. Guérin, and M. Mélier were then put up against one another, when 118 voted thus:—Guérin, 63; and Mélier, 54. There was one blank. M. J. Guérin was then declared duly elected.

14*th May.—Extraordinary Meeting.*

1. *Analysis of Mineral Waters.*

2. *On Hallucinations. By M. Baillarger.*—The work on this subject which M. Baillarger read before the Academy of Medicine on the 14th of May, is divided into

two parts. The first consists of 30 cases, divided into four series; 19 of these cases had been under his own observation, and 11 were taken from books. In the second part, he enters into a detail of the cases, and endeavours to find out the general connection existing between them, and the consequences which we may draw from them, in the study and treatment of mania. The following are the conclusions to which he comes:—

1. The interval between waking and sleeping, and between sleeping and waking, has a direct influence on the production of hallucinations in persons predisposed to insanity, both in the commencement and course of that disease.

2. The mere lowering of the eyelids is sufficient during waking, in some people, to produce hallucinations.

3. Hallucinations occurring in the intermediate state between waking and sleeping, for however short a time they last, very frequently become constant, and bring on delirium.

4. Mania, in people already subject to hallucinations at the moment of sleep, is principally characterised from the beginning by hallucinations.

5. Hallucinations which come on during waking, often become stronger at the moment before falling asleep.

6. A fit of mania may follow immediately, and on the first attack, the hallucinations which occur between sleeping and waking.

7. Hallucinations which have commenced during the intermediate state of sleeping and waking, may, after they have become constant, and before they take their final departure, recur at their former stated periods.

8. Hallucinations of one kind, occurring during waking, may be changed into those of a different nature at the moment of sleep.

9. The moment before falling asleep has much more influence in the production of hallucinations than that of waking.

10. Suppression of a hemorrhage which has produced congestion of the head, is often the cause of hallucinations.

11. Hallucinations ought not to be compared to dreams in general, but to dreams with hallucinations.

12. The influence that the state of passing from waking to sleeping exerts on the production of hallucinations, shows that, at least in some cases, it is purely a physical phenomenon, and that it should be treated by physical means.

13. The hallucinations between waking and sleeping, especially in people predisposed to mania, or who have already suffered from it, are often the commencement of furious delirium.

14. The hallucinations which precede sleep, lasting sometimes, and from the first attack, several hours, are a cause of transitory madness, and may be a sufficient excuse for acts committed during the night by a person who may in the morning be found quite sane.

17th May.

1. *The "ordonnance" of the king* approving of the election of M. J. Guérin was read.

2. *On Mahomed considered as a Madman.*

3. *Lithotomy and Lithotrity. By M. Drouineau.*

4. *Pulmonary Emphysema. By M. Prus.*

5. *Artificial Anus in a Child. By M. Amussat.*—M. Amussat showed some preparations, and detailed some cases. He also stated that the child which he presented to the Academy on the 19th of April was quite well, and was now four months old.

24th May.

1. *Elections.*—A discussion took place as to the best method of electing members to the vacancies.

2. *Secret Remedies.*—An unfavourable report was adopted in reference to certain quack cures.

3. *Surgical Cases. By M. Bouvier.*

4. *Pulmonary Emphysema. By M. Prus.*—The author concluded the reading of his paper, commenced at last sederunt. The following is an abstract of it. Laennec and Louis consider the prognosis of emphysema as not very bad, but other authors do not agree with them in this opinion. The question is a grave one, and can

be determined by facts alone. In medico-legal inquiries, we do not at present know whether to consider it as the cause of death, when we find it and no other lesion existing in the dead body. M. Prus regards emphysema as depending upon an infiltration of air in the inter-vesicular, inter-lobular, and sub-pleural cellular tissue. The regularity of the little bags in which we find the air, is not opposed to this view, being insufficient to prove that they are always formed by distension of the vesicules, as some believe. The author has collected ten fatal cases of emphysema. In several of them, the correspondence between the symptoms during life, and the appearances found on dissection, can be most clearly established. The other cases are those of old men between 56 and 69, in whom, from age, were united all the most active predisposing causes of this disease. Against this doctrine three principal objections may be urged.

1. Is it certain that the state of asphyxia in which these individuals died, was not caused by the presence of frothy mucus? To this M. Prus replies, that in none of his cases did he find frothy mucus in the air passages.

2. Might not the disease have been passive aneurism of the right ventricle—an affection in which the symptoms may so easily simulate those of emphysema? M. Prus answers, that not in one of the cases, were the cavities of the heart found dilated.

3. Pulmonary emphysema, which is a common consequence of difficult respiration, may hasten, but cannot of itself cause death. This objection is not more weighty than the other two; for in one of the cases of M. Prus, death took place suddenly, and in all there was deformity of the bones of the chest, which could only be produced by a disease of long duration.

The cause of pneumonia being so fatal among old people, is, that emphysema has rendered a great part of the lungs more or less unfit for respiration, and inflammation supervening, to render the rest of the pulmonary parenchyma impervious, asphyxia comes on rapidly. From a cursory glance at the history of pulmonary emphysema, M. Prus shows that though the name be new, the disease has been described by Morgagni, Ruysch, Van Swieten, Littre, &c.

The author ends his memoir with the following conclusions:—

1. M. Louis is right in stating that pulmonary emphysema, once that it is established, continues for a very long time. 2. He is also strictly correct in saying that the extent of the emphysema bears a direct correspondence to its duration. 3. Pulmonary emphysema may cause sudden, or almost sudden death. 4. When individuals found dead, bear no trace of any lesion, excepting the anatomical signs of pulmonary emphysema, the state of the blood must be examined. If it be black and viscous, there is ground for entertaining the opinion that death may have been from asphyxia, caused by emphysema.

7th June.

1. *Strangulation of the Penis by an Iron Wire. By Dr Senrre.*

2. *New View of Phlebitis and Purulent Deposits. By M. Carron.*—This paper was read by the secretary. The therapeutic conclusions to which the author comes are, that whenever, after an operation, a purulent deposit is apprehended, the antiphlogistic treatment should be had recourse to. The blood which is withdrawn in this case is not taken for the purpose of weakening the patient, but merely with the view of renewing that fluid.

3. *Loss of part of the Hairy Scalp. By M. Lavacherie.*

Several other papers of less interest were read.

14th June.

1. A letter was read from the Minister of War, thanking the Academy for the memoir of M. Hament, on the improvement of the breed of horses, as a preventative to glanders. He expressed a wish also that the result of their discussions on that subject should be communicated to him.

2. The president announced the death of M. Double.

M. Nacquart proposed that, in order to pay respect to the memory of their late colleague, the Academy should immediately rise. This was unanimously done after M. Amussat had given a brief account of M. Double's last illness, and of his refusal to see any physician till the day before his death.

21st June.

After M. Castel and M. Honoré had been appointed in the room of the late M. Double, to sit in the different committees of which he was a member, M. Pariset read the address which he had delivered in the name of the Academy over M. Double's tomb.

1. *On the Sensation of Touch, and on Cutaneous Sensations.*—M. Gerdy read a paper on this subject, in which he says, that all impressions on the skin are not of the nature of touch; those which do not belong to it, he calls general physical sensations. Thus the shock of the body, the action of caustic, the contact of any substance very hot, or very cold, as frozen mercury, do not convey to the mind a proper idea of the nature of the agent which has produced them. If we look again to another order of phenomena, as the tickling the lips with a hair, or the soles of the feet, or some other parts of the body with the fingers, we find that these sensations are totally distinct, and very different from those by which we recognise numbers, form, direction, or connections of any body. It is then to the power of perceiving these impressions that we limit the name of tactile sensation, although this accompanies all physical sensations, and must necessarily do so, as it is the contact of a foreign body with the skin which causes the sensation.

A long discussion followed, at the close of which, M. Royer Collard said, that during the debate, two questions had arisen, the one was of words, the other, of physiology. As to the first, M. Gerdy wished to give the name sensation to what was generally known by the word impression. He preferred the latter, as it was in general use, but each person might choose for himself in this respect as he thought proper. As to the second question, or that on physiology, he differed entirely from M. Gerdy, who wished to make out that it was the hand that felt, while he and all other physiologists maintained that the brain was the only organ of sensibility.

2. *Artificial Pupil.*—M. Robert presented a medical student, aged 23, who some years previously had his left eye injured by a foil. The right one became sympathetically inflamed, and with the exception of being able to see to walk, he gradually lost all useful vision. He was quite unable to see with the left. M. R. made an incision about three lines in length at the external part of the cornea, and as the pupil was closed by a false membrane, he inserted small hooked forceps into the opening, and catching hold of the membrane, he detached it on one side, brought it out externally, and removed it. The pupil immediately assumed its black colour, the lens was found transparent, and the vision was restored. In four days the wound was healed, and in eight, the functions of the eye were quite perfect. Eighteen months have elapsed since the operation, and his sight still remains excellent.

28th June.

1. *Case of Pellagre.*—A letter was read from M. Gibert, physician to the Hôpital St Louis, stating that he had at present under his charge, a patient affected with pellagre, a very rare disease in France, and soliciting a visit from any of the members who felt anxious to see the case.

M. Emery was deputed by the Academy to verify the nature of the affection.

2. *On the Mechanism of Touch.*—M. Gerdy continued his paper on this subject. He is of opinion that this sense is nothing but simple touch performed with attention, and that it is an error to suppose that it is a peculiar sense. The effects of the sense, however, are essentially different from those of simple touch. The latter is instinctive, is performed without any attention, and only gives us vague ideas, while the former is voluntary, supposes the necessity of reflection, and communicates to us much more exact information on the properties and connections of foreign bodies. Touch may be performed by all parts of the body, but it is the hand that we chiefly employ, and which seems formed more particularly for that function. Moreover, the faculty of exercising the power of touch is varied and modified according to age, sex, climate, customs, &c. It is of different power also in the various species of animals. A long discussion followed.

3. *Treatment of Popliteal Aneurism.*—M. Laugier presented two patients, in whom the operation of tying the femoral artery, after the method of Anel, had been successfully performed. In both of the cases the cure was most complete; and in neither, after the operation, was there the slightest irregularity in the circulation. M. L. asked if it would not be better, as a general rule, to operate always early, instead of

trying the ordinary means, as cold, compression, &c. which commonly fail? in this way the articular arteries would be preserved, which, if the tumour is allowed to attain a considerable size, are apt to be obliterated.

5th July.

1. *On the Preparations of Gold in Syphilis. By M. Chrestien.*—According to the author, they are administered with advantage both in the primary and secondary form. If, however, a bilious or gastric fever supervenes, they must be given up, and emetics and purgatives had recourse to. It is not by their specific action alone, that they are serviceable in this disease; they act also by increasing the evacuations, and have a general tonic effect on the constitution.

2. *On Urinary Secretion in Poisoning by Arsenic. By M. Delafont.*—According to M. D., the secretion of urine is not suspended, but only diminished.

3. *On Conscience.*—M. Voisin read a paper on the sentiments of justice and injustice.

4. *New Instrument for Ligature of Polypi.*—M. Hullin showed a new instrument which he had invented for the ligature of polypi and tumours in the uterus, vagina, and rectum.

5. *On Swelling of the Ears in the Insane. By M. Belhomme.*—In the course of the remarks M. B. made on this subject, he stated, that this affection was frequently seen in idiots labouring under general palsy.

6. *New Instrument for opening the Head in post-mortem examinations. By M. Benald.*

7. *Case of Excision of the Elbow-Joint.*—M. Robert presented a woman, 26 years of age, in whom he had removed the right elbow-joint more than two years ago. She could flex and extend her fore-arm, and had perfect use of her fingers. When the arm hung by her side, the humerus was separated from the radius and ulna by three fingers' breadth, but when she made an attempt to flex the fore-arm, this space diminished, by the ascension of the latter to gain a support on the bone of the arm. She was able to lift a chair. For some months she had been engaged in sewing, but she used the needle with the left hand, and steadied her seam with the right. To prevent fatigue when sewing, from the fore-arm being bent for too long a period, she wore a species of sling.

12th July.

M. Leuret withdrew his name as candidate for the vacant place in the Section of Anatomy and Physiology.

M. Villeneuve read a report on secret remedies.

1. *On Cough depending on the Stomach.*—M. Bricheteau reported on a work of M. Miguel (of Amboise), in which coughs are noticed, depending on abdominal affections, such as gastritis, hepatitis, hysteria, and worms. His observations are founded on therapeutics, and not on post-mortem examinations. M. B. said, that if we are to name diseases from the action of the medicines that cured them, we might call pneumonia, when cured by the tartar emetic, an abdominal affection. The most important part of M. M.'s paper, was the fact of his having got the better of most obstinate coughs by changing the regimen, and making use of medicines whose action was chiefly on the stomach.

2. *On Miliaria.*—M. Briepeteau also read a paper by Dr Galy on this disease, as it appeared in the form of an epidemic in the department of Dordogne. The author is of opinion, that it is an affection of the nervous system. Post-mortem examinations have shown him congestions in the three cavities, and traces of inflammation in the spinal cord. The best treatment is that of *la médecine expectante.*

3. *On the Crossing of the Fibres of the Peduncles of the Cerebrum.*—M. Bégin read a work by M. Foville, who has paid so much attention to the structure of nerves, in which he has shown, that all the mass of the peduncles of the cerebrum interlace. It was thought formerly that the inferior fibres alone crossed, but M. F. has pointed out, that in separating the medullary plates at the bottom of the fourth ventricle, various other interlacements, to the extent of two centimetres, take place. M. B. is of opinion, that this discovery is likely to throw light on several parts of physiology and pathology, which are still obscure.

4. *Researches on the Pathological Anatomy of the Ear of the Deaf and Dumb. By M. Menière.*—After having spoken of the different tissues of the ear, and of the in-

flammation peculiar to each, he remarked, that he had been much struck with the number of cases of deafness among those who suffered from tubercles. He had made a great many dissections, and he had found tubercles in every part of the ear. Typhus fever was also a very common cause of deafness; and he is of opinion, that it is not very frequently congenital, but depends on convulsions in early infancy, and in some cases to a want of intelligence.

5. *Atrophy of the Genital Organs, in consequence of Venereal Disease.*—M. Bourgignon read the case of a man, named Prineo, 38 years of age, who, after numerous attacks of chancre and gonorrhœa, saw his penis gradually diminish, till it was no larger than that of a boy five years old. The hair fell off his pubes, his hands became white, he lost strength, and his character and temperament underwent great modifications. Any person on seeing his hand would have supposed that it belonged to a woman. His voice remained masculine. While these changes were taking place, he was attacked with secondary and tertiary symptoms, as ulcers, exostoses, and caries of different bones. He was put under the ioduret of mercury for six months, when all the secondary and tertiary symptoms disappeared. His penis seemed to have regained much of its power, although it was not of the natural size.

19th July.

1. *On the Preservation of Leeches.*—M. Huzard, in his own name, and in that of MM. Henri and Guibourt, read a report on a pamphlet on this subject, by M. Derens, druggist. Of the three methods generally had recourse to, to preserve leeches after having been used, viz., by plunging them in water, by applying to them some poisonous substance, and by stripping them, he recommends the last, as by this they disgorge all the blood that they have swallowed, and all risk is removed, if they are applied a second time. M. Tochoux remarked that this subject was not of such consequence as formerly, owing to the use of leeches being greatly superseded by cupping.

2. *Stone.*—M. Ripault of Digon, read a case in which the operation of lithotomy was performed, without any stone being found in the bladder. M. R., along with the other surgeons present, believed in the existence of a calculus from the metallic clink produced by the sound when brought in contact with the prostrate. The patient lived six months after the operation, and all the usual symptoms of stone continued to his death. Upon the post-mortem examination, the prostate was found much enlarged, hard and fibrous. On striking it with the sound, a metallic clink was obtained, which had given rise to the belief of the existence of stone.

3. M. Ripault then read a case of hematemesis, which proved suddenly fatal.

Several other papers were read, of no great importance; one, however, by M. Malgaigne, on the history of anatomy, excited much attention, but no analysis of it is given in the *Gazette Médicale de Paris*, as the nature of the subject precludes it.

26th July.

1. M. Chervin read, in his own name, and in that of M. Londe, a report on a pamphlet by M. Rufz, on the yellow fever which reigned at Martinique during the years 1838–39.

2. M. Thomas of New Orleans, then began his paper on the yellow fever which existed in that city in 1841. He maintained that the disease was not contagious, and, that after twenty-three years of experience, he had come to the conclusion, that it required great efforts of reason to believe any physician of good faith, who, possessed of proper medical knowledge, still called himself a contagionist.

3. M. Denonvilliers showed a preserved cherry which he had met with in the post-mortem examination of a man, on whom he had operated for strangulated hernia. The cherry was found in the fold of intestine which had been protruded, although it had not been felt during the operation. But whether it had existed at that time, or had made its appearance afterwards, M. D. was of opinion, that it had been no obstacle to the free passage of the fecal matter.

2d August.

1. *On the Structure of the Globules of Milk. By M. Mandl.*—A report was read on this paper by M. Delens in his own name, and in that of MM. Dubois and Chevallier. After mentioning the researches recently made on this subject by MM.

Donné, Devergie, Lassaigne, &c. &c., M. Mandl says, that each globule consists of a nucleus composed of butter, and an envelope formed by a membranous pellicle. The verification of this structure is of importance in medicine, for if this organization exists, the vitality of fluids is demonstrated, and an immense field for discoveries in humoral pathology is thrown open; besides, a profound knowledge of the molecular constitution of milk cannot fail to be of great use in determining the nutritious properties of various kinds of milk, when considered under the different conditions of health, temperature, &c. M. Mandl, however, has not entered into these details; he has merely confined himself to the analysis of the globules, his experiments on which have been repeated by the reporters. The point was to ascertain, whether the globule of milk is, or is not, provided with an external membrane, or in other words, whether it is organic or inorganic. In order to decide this question, no chemical agent must be used in the analysis which can destroy the milk globule. Independently of all experiment, and at the first point of view, there are some things which are much against the opinions of M. Mandl, and these are, that milk does not stain like other fatty substances, and in the process of churning, the butter is formed at the same moment, and as it were instantaneously all throughout the mass of milk. The method employed by M. M. to show the globules, consists in putting the milk between two plates of glass and moving them in different directions. The oily drops are then observed on one part of the plates, and on another the broken-up membrane, which assumes various forms and appearances. This experiment seemed conclusive to M. Mandl. At the same time that the commissioners admit the justness of the above observations, one fact struck them as calculated to throw doubt on the conclusions to which M. Mandl comes, viz. the thickness and length of several of the portions of the remains of the membrane, both of which seemed to them to be in disproportion to the small size of the globules. If water is mixed with the milk, and the results of the breaking up of the globules attentively watched, the pellicles appear thinner than if no water is added, and this is owing to several of the globules adhering together and appearing as one. Experiments on vegetables containing globules in their pollen have shown similar appearances. The union of several globules is best seen when cream is used. The thanks of the Academy were given to M. Mandl.

2. *Foreign Bodies in the Urethra and Bladder.*—M. Ségalas read a case which happened to Dr Raux, of Hesdin, where a young man, 27 years of age, had introduced the stalk of a pipe into his urethra, and which breaking, had found its way into the bladder. Calculous concretions formed round it. The operation of lithotomy was performed to remove it, and with success. M. Ségalas was of opinion, that in such cases lithotrity should be had recourse to, as both the pipe and its surrounding concretion can be easily broken, either by the *brise pierre* or hammer. If, however, the surgeon has had no experience in the use of the instruments of lithotrity, he ought to prefer lithotomy, or at all events make very few attempts to crush the stone.

3. *Fractures of the Cranium.*—M. Marchal showed a skull in which he had produced fracture of the cranium exactly similar to what was found in the Duke of Orleans. He allowed the body to fall its own height upon the posterior part of the skull. Falls on this situation are much more dangerous than those on the anterior part of the head, for he who falls on the back of his head is unable to bend his body so as to diminish the rapidity or force of the fall, and the arms cannot afford such protection in breaking the blow, as they do if the fall is on the front of the head.

4. *Fatty Hernias of the Abdominal Parietes.*—M. Denonvilliers showed a part of the abdominal parietes of a woman, to which was attached a tumour known by the name of fatty hernia of the linea alba; and which is nothing but a small portion of the solid fat developed between the skin and the aponeuroses, making its way through some opening in the linea alba, or fat developed on the external surface of the peritoneum, and escaping through the linea alba. In the present case it passed through the umbilicus, and it could be easily returned, so that it resembled exactly an umbilical, intestinal, or omental hernia. What was very remarkable also, the woman died of peritonitis, and the symptoms in consequence were so similar to those of strangulated hernia, that many who saw her supposed that she was suffering from strangulation of an umbilical hernia. An operation has been performed for cases of a similar nature. M. Denonvilliers, before the patient's death, diagnosed a fatty tumour complicated with peritonitis. He could not entertain the idea of a tumour which

could be easily reduced, being a strangulated hernia, unless it was supposed that the point of strangulation existed in the neck of the sac, and that the hernia, still enveloped in its sac, was reduced along it into the cavity of the abdomen, a thing which he considered impossible in a situation where the peritoneum was so closely adherent to the abdominal parietes.

5. *On the Therapeutic Effects of Heat applied to the Skin.*—M. Gondret, who read the paper, stated that rheumatic and gouty pains yielded readily to the sudden application of the flame of a match to the affected part. He had experienced much benefit from it himself, and he had used it successfully in his patients. He prefers it to the employment of electricity.

6. *On the composition of some immediate animal principles. By M. Bouchardat.*

7. *Elementary composition of azotized organic matter. By M. Dumas.*—The result of the experiments which he and M. Cahours had performed on this subject was as follows: That the albumen of serum, of eggs, and of vegetable albumen, has always the same composition; that caseum, whether taken from milk or plants, has the same composition as albumen; that fibrine, whether from the blood or plants, has always more nitrogen and less carbon than albumen or caseum; that in almonds, peas, and beans, there exists a matter analogous to caseum in some of its properties, but still possessing more azote than the fibrine, but less carbon.

9th August.

A long discussion took place on the motion of M. Bouillaud, that a commission should be formed to inquire into the best mode of treating typhus fever; and he proposed that, instead of the members of it going about from hospital to hospital, to investigate the most successful kind of treatment, the government should be applied to, and that a ward, capable of containing from 50 to 60 beds, should be set apart for patients affected with this disease, where the different modes of treatment might be carried on. A commission was appointed to report on M. Bouillaud's motion.

16th August.

New Antidote to Corrosive Sublimate.—M. Mialthe laid on the table the following note. "It results from my experiments that the hydrated proto-sulphuret of iron, (an inert substance,) possesses the property of instantaneously decomposing corrosive sublimate, producing proto-chloruret of iron, and bisulphuret of mercury, both of which are quite innocuous. This precious property possessed by the hydrated proto-sulphuret of iron, causes me to proclaim it as an antidote to a terrible poison. I will in due time communicate my experiments to the Academy; but, in the mean time, content myself with stating a simple experiment by which its virtues can be easily tested. When a few centigrames of corrosive sublimate are introduced into the mouth, a disagreeable and well characterized metallic taste is speedily experienced: if a gargle of the proto-sulphuret of iron be used for a few seconds, it causes it to disappear as if by magic."

UNIVERSITY OF EDINBURGH—IMPORTANT REVIVAL.

Resignation of Dr Home, and Appointment in his room of Dr Alison.—On Tuesday the 9th August, the following letter—the result of many conferences—was read to the Town Council:—

"EDINBURGH, *August* 8, 1842.

MY LORD,—Having for forty-five years discharged the duties of the chairs of Materia Medica and Practice of Medicine; considering also, that from my very advanced age, (although still enjoying the most perfect health,) I am become unable to perform the important duties of the Professorship which I now hold; also wishing before I go home, to have some time free from my laborious duties, I have for some time intended, and now herewith offer to your Lordship and the other honourable patrons of the College, to resign the Professorship of the Practice of Medicine, on condition of your providing a retiring allowance of L.300 sterling *per annum*, and making such other arrangements as may seem necessary for securing the requisite payments of the said allowance during my life. I am, &c. JAMES HOME."

"*To the Right Hon. the Lord Provost.*

As had been previously arranged, Dr Home's terms were at once agreed to, and Dr Alison appointed his successor. In the mean time, the chairs of Physiology and Practice of Medicine are to be severally burdened with L.150, to make up the allowance.

The Election to the Chair of Physiology, vacant by the translation of Dr Alison, is to take place on the 20th of September. The candidates are Dr Allen Thomson, Professor John Reid of St Andrews, and Dr Hunter Lane. Though not a candidate, energetic measures are being made by some to bring in Dr Craigie.

Chair of Pathology.—The contest for this chair has been a keen one, and the successful candidate came in by a single vote. Dr Bennett having retired, there only remained three competitors in the field, viz. Drs Henderson, Handyside, and Craigie. The roll having been called, Dr Craigie had 12 votes, Dr Henderson 11, and Dr Handyside 10. Dr Handyside's name was then struck off, when Dr Henderson was chosen by a majority of 17 to 16. Dr Craigie's friends protested, declaring that by the set of the burgh, he who had a simple majority at the first vote, was the person elected, and that the Council had no power to make an appointment by a second vote. We understand the protest is not to be acted upon. The chair is burdened with L.200 a-year to the late incumbent, Dr John Thomson.

Dr Henderson's appointment will prove of great benefit to the university, as he is a popular lecturer, as well as an erudite and *practical* pathologist.

NOMINA EORUM QUI GRADUM MEDICINÆ DOCTORIS IN ACADEMIA JACOBI SEXTI REGIS, QUÆ EDINBURGI EST, ANNO MDCCCXLII. ADEPTI SUNT.

* *Those recommended in general.*
** *Those selected for competition for the Prizes.*
*** *Those who have obtained the Prizes.*

CAROLUS ABERCROMBIE ANDERSON, Scotus. On Rheumatism.
*DAVID ANDERSON, Scotus. On the Mechanism of Vomiting.
CAROLUS ANDREWS, Anglus. On the Principles applicable to the Treatment of Fractures of the Extremities.
ALEXANDER BARCLAY, Scotus. On the Structure and Functions of the Placenta.
*JOANNES BARCLAY, Scotus. On the Spleen in Intermittent Fevers.
GULIELMUS THOMSON BARKER, Scotus. On Acute Gout.
JOANNES WYATT BARNARD, Anglus. On Rubeola.
EDUARDUS GULIELMUS BAWTREE, Anglus. On Delirium Tremens.
JOANNES BEDELL, Neobrunsvicensis. On Synochus.
JOANNES BENNETT, Hibernus. On Monomania.
*THOMAS BERRYMAN, Anglus. On Pneumonia.
RICARDUS BLENNERHASSET, Anglus. On Urethritis Venerea.
NEWTON BLYTH, Anglus. On Tubercular Consumption, its Nature, Causes, and Treatment.
SAMUEL BROWN, Scotus. On Asthma.
*SEPTIMUS BUDD, Anglus. Remarks on the Causes and Mode of Propagation of Typhoid Fevers.
**GULIELMUS CAMPS, Anglus. On Pneumonia, its Pathology and Treatment.
HENRICUS T. CASTLE, Anglus. On some of the Diseases of Joints.
*EDUARDUS CHAPMAN, Scotus. On Uterine Hemorrhage.
*VANS CHRISTIAN CLARKE, e Smyrna. On the History and Nature of the Plague.
JOANNES CLERK, Scotus. On Tabes Mesenterica.
*JACOBUS MOFFAT COWAN, Scotus. On Delirium Tremens.
MICHAEL CUSSEN, Hibernus. On the Typhoid Fever of Paris and Wales.
JOSEPHUS DICKSON, Anglus. On Crural Phlebitis.
ARTHURUS DONNELLY, Hibernus. On Scarlatina.
*GULIELMUS VALLANCEY DRURY, Hibernus. On Insanity.
***FREDERICUS DUNCOME, ex India Occidentali. On Delirium Tremens.
*GUALTERUS FERGUS, Anglus. On Contributions to the Vital Statistics of English Paupers.
DAVID FERGUSON, Scotus. On Delirium Tremens.
CAROLUS FORD, Anglus. On Bronchocele.

Alexander Forteath, Scotus. On the Influence of Food and Climate on the Colour and Clothing of Animals, more particularly of Birds.

*Gulielmus Fraser, Scotus. On Hydrophobia.

Joannes M. Grant, Scotus. On Emphysema.

Thomas Gillham, Anglus. On the Physiological and Therapeutic Actions of the Narcotic Umbelliferæ.

Gulielmus Gordon, Hibernus. On Pneumonia.

Ricardus Hair, Scotus. On Inflammation of the Liver.

*Georgius Henderson, Anglus. On the Forms, Diagnosis, Causes, and Treatment of Dysentery.

Henricus Josephus Hinson, ex Insula Bermuda. On the Symptoms, Causes, Diagnosis, Treatment, &c. of Aneurisms.

*Ralph Clayton Hislop, Anglus. On the Application of the Numerical Method to the Science of Medicine, but more especially to Therapeutics.

Carolus Hill, Hibernus. On Acute Rheumatism.

Gulielmus Thomas Hoskin, Anglus. On Strictures of the Urethra.

Joannes Hulbert, Anglus. On Crural Hernia.

Franciscus Wemyss Irvine, ex Australia. On Solution.

***Robertus Jackson, Scotus. On Asphyxia by Submersion.

Joannes Johnstone, Scotus. On Syphilis.

Thomas Blackadder Johnstone, e Gibraltar. On Fractures in General, and their mode of reunion.

*Gulielmus Jollie, Anglus. On Puerperal Convulsions.

Gulielmus Marwood Kelly, Anglus. On the Influence of Age on Diseases.

**Joannes Gib Laing, Scotus. On Delirium Tremens.

Joannes Stewart Lamb, Anglus. On the Importance of the Study of Meteorology.

*Joannes Lambert, Anglus. On Scarlatina.

Jacobus Scarth Spence Logie, Scotus. On the ordinary Stethoscopic Diagnosis of Pregnancy.

*Ricardus Jacobus Mackenzie, Scotus. Practical Observations on Injuries of the Head.

***Andreas Georgius Malcolm, Hibernus. On the Pathology of Continued Fever.

Benjamin W. Marlow, Hibernus. On the Spermatozoa.

*Alleyne Maynard, Barbadensis. On Ichthyosis.

*Antonio Januario Moderno, ex Insula Madeira. On some Diseases of the Brain, more particularly Apoplexy.

*Jacobus Moore, Hibernus. Can acquired Habits and Physical Configuration of Body descend to the Offspring?

Thomas Moorhead, Hibernus. On the Treatment of Syphilis.

Jacobus Stuart Morrieson, ex India Orientali. On Dysentery.

*Guliemus Mort, Anglus. On Chorea.

*Joannes Howard Norton, Anglus. On Organic Chemistry in its Connections with Animal Physiology.

Georgius Ogilvie, Scotus. On the Analogies of Plants and Animals.

*Thomas Beville Peacock, Anglus. Three cases of Chronic Pleurisy.

*Thomas Bailey Gulielmus Potts, Anglus. A Report of 104 cases of Midwifery, with remarks.

Andreas Pringle, Scotus. On Placenta Presentation.

Gulielmus L. Reid, Scotus. On Strabismus.

Jacobus Robertson, Scotus. Observations on Nervous Agency.

Gulielmus Robinson, Anglus. On the Primary Forms of Bronchitis.

Arthurus Ross, Hibernus. On Lead.

Joannes Robertus Skinner, Scotus. On the Diseases of the Conjunctiva.

*Gulielmus Smellie, Scotus. On the Vascular System, and the Circulation of the Sap in Vegetables.

Hugo Smith, Hibernus. On Hæmorrhage.

Joannes Young Smith, Scotus. On the Varieties of the Calculus Diathesis, and their Urinary Deposits.

Gulielmus Smith, Hibernus. On the Cultivation of Medical Science.

75 JOANNES SMYTH, Hibernus. On Ascites.
JOANNES ALEXANDER GULIELMUS THOMPSON, Hibernus. On Asthma.
PARK BENJAMIN TUCKER, ex Insula Bermuda. On the Nature and Treatment of Uterine Hæmorrhage.
JOANNES WAGGETT, Anglus. On Generation.
CAROLUS FRANCISCUS WARNEFORD, Anglus. On the Inflammatory Disease of the Thoracic Viscera.
80 JOANNES WHITE, Anglus. On the Physiology of Circulation.
*CORBETT WHITTON, Anglus. On the History, &c. of Monkhood.
*JOSEPHUS WICKHAM, Anglus. On Croup.
GEORGIUS HARVEY WILLIAMS, Anglus. Observations on the Forms and Treatment of Diseases in General.
JOANNES WILSON, Scotus. On Inflammation of the Liver.
85 FRANCIS HENRICUS WOODFORDE, Anglus. On the Nature and Treatment of Scrofula.
THOMAS BELL WRIGHT, Hibernus. On Iodine, its Chemical Properties, &c.
JACOBUS GULIELMUS GEORGIUS WYSE, ex India Orientali. On Acute Hydrocephalus.

ROYAL COLLEGE OF SURGEONS IN LONDON—LIST OF GENTLEMEN ADMITTED MEMBERS IN THE MONTH OF JULY 1842.

Atkinson, George Paul, Wakefield, Yorkshire.
Allen, Henry, Macclesfield.
Bennet, William, Jamaica.
Boast, Charles Bird, Blackfriars Road.
Butler, Thomas Shuttleworth, Brentwood.
Boddy, Walter Thompson, Braconsfield.
Boycott, Thomas, Exeter.
Carlile, John Burford, Hull.
Cockell, Edgar, Down Street.
Clifford, Frederick Morrison, Maldow.
Clark, George Brown, Colchester.
Cornwall, James, Fairford, Gloucestershire.
Cooper, Robert, Blackfriars Road.
Campbell, John, Belfast.
Cox, Abraham, Kingston, Surrey.
Coffey, Charles, Belfast.
Cowell, Thomas William, Piccadilly.
Cooke, Samuel Hamilton, Tipperary.
Callaway, Henry, Tottenham.
Clarke, Benjamin, Hackney.
Davies, William, Gloucester.
Dinham, Robert, Taunton.
Easson, James Utton, London.
Evans, Henry Bentale, Brixton, Surrey.
Eltringham, William, Newcastle-on-Tyne.
Fixott, Henry Cline, Jersey.
Fowler, Henry Day, Cheltenham.
Fitzgerald, Charles, Peuruddock, Sidmouth, Devon.
Fox, Oscar Harger, Woburn Place.
Folwell, William, Brompton.
Freemen, Henry Pettener, Daventry.
Greenhalgh, Robert, Charlotte Street, Fitzroy Square.
Griffin, William Boyle Mortimer.
George, Robert, Hackford, Norfolk.
Hunt, James, Dunmore, East County, Wexford.
Heritage, Octavius Frederick, Cranbrook, Kent.
Hutchison, John, Crauford Street.
Harrison, Edward Thompson David, Welchpool, Montgomeryshire.
Hawthorne, Henry Orme, Uttoxeter, Staffordshire.
Hodgson, Robert, Sandwich.
Hingston, Andrew, Liskeard.
Howell, Charles William Henry, Wells.
Hood, Robert, Morpeth.
Hooper, Charles, Newington Place, Kennington.
Jackson, William, High Wycombe.
Jones, George Turner, Mold, Flintshire.
Lawford, Edward, Leighton-Buzzard.
Lloyd, Edward, Tamworth.
Lyne, Edmund, Ormond, Somerford Magna.
Loinsworth, Francis Power, Milford, Pembroke.
Langston, William, Ludlow.
Lewis, David Thacker, Haydon Square.
Lacry, Alfred, Morley, Derbyshire.
Magenis, Peter, Chester Place, Kennington.
Moir, James, Aberdeen.
Moore, John, Wickham Market, Suffolk.
Mackay, Peter, Dublin.
M'Neecr, William, Dungannon.
Macpherson, Hugh Martin, Aberdeen.
Niblett, Robert, Glo'ster.
Nicholls, John Frederic, Wells, Somerset.
Oliver, John Robert, Isle of Man.
Parr, Thomas, Belfast.
Powell, John Allman, Roscrea, Tipperary.

Palin, John Adams, Barnes Green, Surrey.
Parrat, Henry Hodgson, E.I.C.S.
Roberts, Lionel, Exeter.
Robinson, Frederic John, St Anstele.
Scraggs, Matthew Robert, Carlow.
Sime, John George, Croydon, Surrey.
Smith, Ralph, Dublin.
Speer, Henry, Kingstown, Dublin.
Spiers, Frederick, New Kent Road.
Taylor, William Garbutt, Engfield.
Tweed, John James, Alfred Place, Bedford Square.
Watt, William, Gamrie, Banffshire.
Wilkinson, Charles Nelson, R.N.
Willes, George Irwin, Portsmouth.
Winship, John, Low Felling, Durham.
Woolnough, Edward Graham, Ipswich.
Wood, William, Wakefield.

BOOKS RECEIVED.

1. Du Strabisme, par A. A. Velpeau, Professeur de Clinique Chirurgicale à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital de la Charité, Membre de l'Académie Royale de Médecine, &c. Supplement aux Nouveaux Elémens de Médecine Opératoire, en 8, pp. 180. A Paris: J. B. Baillière, 1842.

Vide p. 839 of this Number.

2. Report of the Result of the Operation for the cure of Strabismus in 100 Patients. Read at the annual meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association, held at Bath, June 30, 1842. By J. B. Estlin, F.L.S., Surgeon to the Dispensary for the Cure of Complaints of the Eyes, Bristol. [From the Prov. Med. Journal.] 12mo, pp. 15. London, 1842.

This pamphlet arrived after the sheet containing the notice of Velpeau had gone to press.

3. A Practical Treatise on Diseases of the Scalp. By John E. Erichsen, Member of the Royal College of Surgeons in London, Fellow of the Royal Medical and Chirurgical Society, and formerly House Surgeon to University College Hospital, 8vo, pp. 192, plates. London: John Churchill, 1842.

This work makes no pretence to originality, which is a great recommendation now-a-days, when authors seem at least as anxious to give *new* as *true* views. The subject of diagnosis is ably and clearly handled, and deserves the attention of practitioners. We fear that loose notions on this point lead to much of the want of success with which diseases of the scalp are so often treated.

4. Deformities of the Spine and Chest successfully treated by Exercise alone, and without Extension, Pressure, or Division of Muscles. By C. H. R. Harrison, M.R.C.S., Honorary Sec. to the British Medical Association, &c. Illustrated by drawings. 8vo, pp. 164. London: John Churchill, 1842.

"My object has been to make this an easily intelligible, and if possible, a useful book, both to the young practitioner and to the enlightened general reader."—*Author's Preface.*

5. Commentaries on some Doctrines of a dangerous tendency in Medicine, and on the general principles of safe practice. By Sir Alexander Crichton, M.D., F.R.S., L.S., & G.S., &c. &c. &c. 8vo, pp. 283. London: J. Churchill, 1842.

This is a good book, and contains many important considerations. In the introduction the author treats of the imperfection and improvement of medicine in general. The first commentary is "On the Functions of the Heart and Arteries in Health and Disease;" the second, "On the Doctrines and Treatment of continued Fevers of a Typhoid character;" and the third and last, "On some Important Questions relating to Insanity, both in a Medical and Legal point of view." There are also added to the volume Extracts from the Annals of the General Hospital of Hamburgh on the non-mercurial treatment of Syphilis, with Remarks.

6. Remarks on the Conduct and Duties of Young Physicians, addressed to the Edinburgh Medical Graduates of 1842, on the occasion of their receiving their Medical Degree, at the annual public meeting of the Senatus Academicus of the University, held on the 1st August. By James Y. Simpson, M.D. Edin., Professor of Midwifery in the University, &c. &c. 8vo, pp. 23. Edinburgh: M'Lachlan, Stewart, & Co., 1842.

An admirable discourse.

7. A Bedside Manual of Physical Diagnosis. Second edition, revised and enlarged, with an Appendix, containing a plan for the registration of cases in hospital and private practice; also an abstract of Mr Farr's Statistical Nosology. By Charles Cowan, M.D., P. and E., &c. &c. 16mo, pp. 99. London: Sherwood, Gilbert, & Piper, 1842.

This little book presents a faithful summary of all that is most important to bear in mind at the bedside, when making a diagnosis from physical signs. We strongly recommend it to the student, as an excellent introduction to Newbigging's Barth and Roger, and other similar works; to the more advanced in the practice of auscultation and percussion, it will prove a useful refresher to the memory.

8. A Treatise on Amaurosis and Amaurotic Affections. By Edward Octavius Hocken. 8vo, pp. 359. London: Highley, 1842.

A comprehensive and able treatise, giving a good digest of the opinions of others, along with those of the author.

9. Twenty-Second Annual Report of the Directors of the Dundee Royal Asylum for Lunatics, 8vo, pp. 40. Dundee, 1842.

10. Remarks on Amputation: an Essay, submitted to the Faculty of Physicians and Surgeons of Glasgow, when candidate for admission into that body. By Alexander King, Licentiate of the Royal College of Surgeons in Edinburgh, and Member of the Glasgow Medical Society. 8vo, pp. 44. Glasgow: Hamilton, 1842.

Mr King has given a great deal of useful practical and statistical information within narrow limits. The essay is exceedingly creditable to its author. We recommend it to the notice of hospital surgeons.

11. Medical Report of the Managers of the Lunatic Asylum of Aberdeen, for the year ending 30th April 1842. 8vo, pp. 16. Aberdeen, 1842.

12. A Case of Carcinomatous Stricture of the Rectum, in which the Descending Colon was opened in the Loin. By Alfred Jukes, Surgeon to the General Hospital, Birmingham. With plates. 4to, pp. 294. Churchill, 1842.

"It is the second, (third), instance of the successful application of Amussat's operation by British surgeons, for the removal of intestinal obstructions, at a period when this would otherwise have proved speedily fatal. I say *successful*, because although my patient lived only sixteen days after its performance, yet, during that time, the bowels acted freely, and were relieved from every sign of obstruction by the artificial aperture."—*Author's Preface.* The two other British surgeons who have performed this operation, and published their cases, are Mr Clements of Shrewsbury, and Mr Teale of Leeds.

13. The American Medical Library and Intelligencer: a concentrated record of medical science and literature. By Robley Dunglison, M.D., Professor of the Institutes of Medicine, &c., in Jefferson College of Philadelphia. Published monthly. New series. Vol. I., Nos. 1–10. Philadelphia, July 1841. to April 1842 inclusive.

The numbers of the Medical Library contain reprints of Clark on Climate; Gibert on the Blood, translated by Dix; Davidson (Glasgow) on the Sources and Mode of Action of Fever; Hudson's Inquiry into the Sources and Mode of Action of the Poison of Fever; Macrobin's Practical Medicine; Hocken on Amaurosis; and Hope on Diseases of the Heart and Great Vessels. The Intelligencer has a separate paging, and is stitched up with the monthly issue of the reprints. It is a periscopic journal, the articles being selected from American, British, and other medical journals, with occasionally original communications.

OBITUARY.

Died at Lyons, BARON LARREY, on his return from a medical inspection which he had been making in Africa. Wherever surgery is cultivated, his name will long be highly honoured, as no one ever more justly acquired a European reputation. A subscription has been entered into to raise a monument to his memory, which it is intended to place in the enclosure in the Val-de-Grâce.

At Liverpool, on the 26th May, Surgeon Stephenson, 45th foot.

At Rochester, on the 31st May, Dr Jackson, Assistant-Surgeon.

At Liverpool, on the 20th June, Peter Smith, Esq., Staff-Surgeon.

TO CORRESPONDENTS.

The "Cases of Poisoning with Sulphuric Acid," in our next.

The volume of this Journal for 1841 may be purchased separately. It contains the letter referred to.

Articles not inserted are never returned to the author, unless a special request has been made to that effect. Personal controversies and professional acrimonies ought to be consigned to the weekly medical periodicals, if they must be made public.

THE

LONDON AND EDINBURGH

MONTHLY JOURNAL

OF

Medical Science.

OCTOBER 1.] No. X. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Two Cases of Poisoning by Sulphuric Acid. By* JOHN THOMSON, Esq., *Surgeon, Kilmarnock.*

CASE 1. At half-past six o'clock on the evening of the 28th February 1842, I was hastily summoned to attend Mrs B., aged 25, the mother of one child, and in the fourth month of her second pregnancy, who was said to have swallowed a quantity of sulphuric acid by mistake, some fifteen or twenty minutes before. I immediately parcelled up a quantity of the carbonate of magnesia, and proceeded to the house, which was at no great distance, with as much promptitude as possible. On going in I found her sitting on a chair, and giving utterance to the bitterest exclamations on account of the pain she was suffering, and which she said, (pointing with her hand), extended from the mouth as far down as the epigastrium. I observed at once upon her hands several brownish-coloured patches, evidently produced by the action of a strong acid. The skin for some distance round the mouth exhibited the same appearance. The cuticle of the lips and tongue, as well as the lining membrane of the inside of the cheeks, gums, and tonsils, as far back as could be seen, were

of a whitish appearance, shrivelled, and in some places abraded and hanging in shreds, and the fauces were filled with a quantity of ropy, brownish-looking mucus. She had already vomited several times, the ejecta having corroded not only the habiliments of the patient, but also some of those who were around her. During the course of this brief examination, I was told that Mrs B. had sent a little girl, some eight or nine years of age, to a druggist in the neighbourhood for a pennyworth of vinegar, and that the girl had asked for vitriol by mistake. The whole of this had been swallowed, though for what purpose even vinegar should have been drunk, it seems difficult to say.

Having now got some of the magnesia suspended in water, she tried to swallow a portion of it, but it was almost instantaneously rejected. Almost as soon as she put it to her mouth, I observed a distinct effervescence taking place on her lips. The efforts to swallow the magnesia were repeated at short intervals for about two hours. The dysphagia was no doubt very great, but the firm resolution of the patient conquered every obstacle, so that a quantity of from three to four ounces was eventually got down. The vomiting continued to recur at short intervals, the ejecta consisting of a dark brownish-coloured mucus, mixed with what appeared to be portions of disorganised membrane. The hands and feet had now become so cold, that it was almost impossible to keep up their temperature. From this period she began to fall into a sort of stupor, from which she started up ever and anon, complaining loudly of burning pain in the stomach. She continued much in the same state till near midnight, when I left her, the pulse at this time being but little increased in frequency. At half-past three of the following morning, I was again called. She was now much weaker; the pulse had become small and quick, beating 120 in the minute; the belly was much swollen and tympanitic, and its temperature considerably increased above that of the rest of the body. Feeling that she was dying, she made some allusion to family affairs, requested of a brother to be gently raised up in bed, in whose arms she almost immediately expired, without a single struggle, having lived rather more than nine hours after the reception of the fatal dose. No post-mortem examination of the body was permitted.

Case 2. *July* 3, 1842.—To-day I was called to visit Elizabeth Henry, who was said to have swallowed about an ounce of sulphuric acid a short time before. On entering the confined apartment in which she lived, I found her lying motionless in bed, her face pale, hands rather cold, and her pulse at times scarcely perceptible at the wrist. The skin, for some distance round the mouth, was of a dark brown colour, evidently charred by the action of a strong acid. Just before I entered she had vomited a quantity of dark-coloured glairy matter, and on both

sides of the bed on which she was lying, I observed numerous reddish-coloured patches, which seemed to be the result of former ejections from the stomach. As the readiest thing on which I could lay my hands, I had taken with me a quantity of the carbonate of soda: part of this I got dissolved in water as speedily as possible, and endeavoured to get it into her mouth. In this, however, I found no ordinary difficulty, as her jaws seemed convulsively closed; but with the point of a knife insinuated between her teeth, I succeeded, by the exercise of very considerable force, in so far opening her mouth as to permit of a tea-spoonful or two of the solution being got in. These were slowly swallowed, and a little more was immediately given, but the whole was instantly rejected, along with a quantity of mucus almost of the appearance and consistence of molasses, though somewhat lighter in colour. I persevered again and again in endeavouring to get her to swallow some of the solution, but with the same indifferent success as before. During the whole of this time, she had remained in a state of utter unconsciousness, and to my mind presented every appearance of a person that must undoubtedly sink within a very few hours. With this impression I left her for a time, leaving, however, strict injunctions on those who remained with her, that if she rallied a little and became capable of swallowing, they were to persist in their attempts to get her to swallow as much of the solution of the soda as possible. In the course of the afternoon, (the acid had been taken a little after mid-day,) a messenger came to inform me, that she had now become conscious, was able to speak a little, and was perfectly alive as to the nature of the situation in which she had placed herself. From this individual I learned at the same time, that she had taken, at different times of course, all the soda which had been left in the house, although the greater part of it had been rejected by vomiting. I visited her immediately afterwards, and found that the body had now acquired greater warmth—that the pulse had become stronger, and was not materially increased in frequency—and that she was now able to speak in a low tone of voice. On looking into the mouth, the tongue seemed shrunk in volume, and presented a whitish appearance, as if the cuticle was thoroughly disorganized. The inside of the cheeks and palate seemed to have suffered much less injury, although these also were thickly studded over with small white spots or blisters. She now complained very much of burning pain in the throat, and from this, as far down as the cardiac orifice of the stomach. Pressure over the stomach produced no uneasiness; neither was there any pain or tension of the belly. There was neither dysuria nor tenesmus; the countenance was calm, and the respiration free and unembarrassed. Although deglutition was accomplished with very great difficulty, yet I recommended the sodaic

solution to be continued during the evening, and the patient to be otherwise left as much undisturbed as possible, throughout the course of the night. Next morning I learned that she had passed a tolerable night, having occasionally slumbered a little, and her complaints of pain were now chiefly confined to the throat, and the parts immediately subjacent to the lower end of the sternum. The act of deglutition had become so difficult and painful, that the swallowing even a teaspoonful of cold water, seemed to be accomplished only with great exertion. In other respects, she continued much in the same way. During the afternoon, she began to swallow liquids a little more easily, though even then these were got over in very small quantities. An opiate draught was administered in the evening; and under the influence of this, a more comfortable night was passed. On the morning of July 5th, ten leeches were applied to the epigastrium, in consequence of the pain having increased. A purgative enema was directed to be given, and afterwards to be followed by enemata of beef-tea. The pulse had risen to 90, and the skin had increased above the ordinary temperature. At my visit next day, I was given to understand, that the night had been passed in rather a restless manner, notwithstanding of the opiate having been given as on the night previous. But this was so far accounted for, by symptoms of an abortion which had by this time become obvious, and which, in the course of a few hours, were followed by the expulsion of the ovum. The skin, however, had become cooler, the pulse less frequent, and on the whole, the patient presented signs of a general amelioration. On again examining into the state of the mouth, the dorsum and sides of the tongue were thickly covered with small circular corrosions; the inside of the cheeks and palate, now denuded of their cuticle, exhibited the same appearance; the tonsils were very much swollen; and a thick slough was hanging, partially detached from the lower end of the uvula. The application of the leeches to the epigastrium, and the subsequent application of the same number to the throat, where pain on pressure had greatly increased, contributed in no small measure to relieve the uneasiness which had been complained of in these places. Still the patient continued at times to be exceedingly annoyed with pains, which seemed to be of a spasmodic nature, extending from the centre of the sternum, as far down as the cardiac orifice of the stomach, and which for the time almost prevented even the passage of liquids to the stomach. Though the pain in this latter situation had been much alleviated by the local depletion, still unceasing uneasiness was complained of, so as to lead to the conjecture, that a slough of some depth might be formed. This idea seemed so far borne out by a quantity of blood having been vomited on the eleventh and thirteenth days after the acid had

been swallowed, and by the pain continuing in this place long after it had ceased to exist in any other. After this period, convalescence became fairly established, and deglutition became gradually more easy of accomplishment. She is at this date quite well, and no symptom of contraction of the œsophagus seems to exist.

Reflections.—On reading over the short history of these two cases, the first thing, perhaps, that will attract notice, is the very marked contrast which the appearance of the two patients presented, on being first visited. In the first case, and that in which life was destroyed in a very few hours, the intellect of the patient was clear and undisturbed. She was able to sit up, and even to make the most earnest entreaties for relief. In the other case, and that in which there is good reason to believe that little or none of the acid had entered the stomach at all, the patient remained in a state of unconsciousness for three or four hours, and even at the end of this time, when she did begin to rally, the strength seemed greatly prostrated, and she could only speak in a whisper. The influence of fear, and alarm for the consequences of the rash act, acting upon a constitution it might be previously irritable and nervous, might probably be the means of throwing her into a state of hysteric torpor. But be this as it might, it certainly rendered the administration of the usual antidotes a matter of almost absolute impossibility, and thus gave the acid that had been swallowed time sufficient to perpetrate all the mischief of which it was capable. This patient, however, confessed to me afterwards, that she had only taken a single mouthful of the vitriol, and immediately threw the rest away. From the train of phenomena which followed, there can be very little doubt, that even of this a very small portion only can have passed into the gullet, as she assured me that she had run a distance of at least 200 yards along the street before she reached her own house, and it was only after she had entered the house that vomiting commenced; so that had even a single mouthful been swallowed, it may fairly be presumed that the work of destruction, in this case at least, would have been complete. But what seems a matter not unworthy of notice is the fact, that for the first few days she did not complain of pain in the tract of the upper half of the œsophageal tube, while along the lower half, as far down as the cardiac orifice of the stomach, she made constant and bitter complaints. After the mouth and fauces had got completely well, when there was no difficulty whatever experienced in getting liquids over the throat, and at a distance of twelve or fourteen days from the time when the poison had been swallowed, the pain which she felt when liquids were passing the lower half of the tube, was often of a nature so

acute, as to make it a matter of urgent necessity before she could again be prevailed upon to repeat the attempt. From this circumstance alone very little doubt can exist, that this part of the œsophagus was not only divested of its lining membrane, but that as much of the acid had reached it as produced pretty extensive sloughing.

Dr Christison, in his admirable work on poisons, says, "it is also exceedingly probable, although no systematic writer has to my knowledge laid it down, that the strong acids may cause death, without reaching the stomach, or even the gullet, by exciting spasm and inflammation of the glottis and larynx." Keeping steadily in view the importance of this statement, by an author so justly celebrated and distinguished, it certainly becomes the duty of the medical attendant assiduously and narrowly to watch his patients, however small may be the quantity of the acid which is supposed to have been taken. Though the symptoms at first may appear to be of a trivial nature, and the amount of the injury which has been done may not appear so extensive as to excite much alarm, yet nevertheless a train of symptoms may ensue, which may eventually not only become dangerous, but also difficult to subdue.

ARTICLE II.—*Remarks on the Anatomical Structure of the Cauliflower Excrescence of the Os Uteri.* *By* ANDREW ANDERSON, M.D., *Anderson's University, Glasgow.*

"Considerable difference of opinion," says Professor Simpson, "has been expressed by pathologists with respect to the morbid anatomy of cauliflower excrescence." Having lately, through the kindness of Dr Johnson, master of the Dublin Lying-in Hospital, been allowed to examine a tumour of this kind, I shall shortly mention what I saw, having first briefly stated the opinions which have been hitherto held on the matter.

No more appropriate name than that which it has received could have been bestowed on this disease, for the excrescence feels firm, nodular, and yet very brittle, exactly as the vegetable does; as far as the examination of one specimen goes, it appears to me that it may be much more fitly likened to a cauliflower, than, as it has been by some, to a strawberry.

It is insensible when touched, springing from the os uteri by a broadish base, and weakening the woman by a continual flow of much clear water, which, when the tumour is in any way irritated, is mixed with blood.

When we used the speculum in the case I examined, the rough tumour was plainly seen, and the pressure of the instrument

used pretty plentiful bleeding, breaking off a small fragment of
› mass. It was not as Sir C. Clarke says it usually is, of a
ıh red, but of a very pale reddish yellow colour; and I can
ıily suppose that in the case which he describes the redness
s caused by partial strangulation of the prolapsed tumour.
The tumour was tied, some pieces broke off, and I dissected
›m carefully under water and a lens. They were nodulated,
egular, and so soft as to be easily crushed by the fingers.
ig. 1.) One of these pieces was two inches long, and after
ing slightly macerated and hung in spirits, had exactly the
pearance represented in the uppermost of Sir Charles' figures.
On making a section of a portion of the tumour with a fine
ife, its structure was seen to be much more complex than it
›med to be, when examined outside; it was finely laminated,
pearing in section as if formed of somewhat parallel plates of
whitish matter. These plates were separated from one ano-
er by reddish lines, which proved to be the layers of a mem-
ane, beautifully vascular, and very thin. This membrane was
›ced within the formerly described layers; or rather they
›med folded round its laminæ, so that the external surface of
e mass was formed by the foldings of the thicker substance,
ıich then dipped into the tumour. (Fig. 2.) There was thus
structure present resembling what Sir C. Clarke has de-
ribed as a general investing vascular membrane.
In a morsel of the membrane highly magnified, I could detect
fine fibrous structure of great delicacy, (Fig. 6.) absolutely
arming with blood corpuscles and cells, to the presence of which
eat part of its apparent thickness seemed due. The course and
ıtribution of the capillary vessels could not be distinguished with
fficient exactness. Besides the corpuscles which retained their
›m, there were others apparently undergoing various changes,
hibiting every variety of shape, and mixed with nucleated cells
different aspects. Of the latter some were clear, with a single
cleus; others exactly like Dr Barry's figures of the ovum in
rtain stages, being full of young cells; there were caudate cor-
scles, like those Miller saw in cancer, and other bodies of va-
ıus shape. (Fig. 4.) In the white laminæ, examined in the
me way, no fibrous basis existed; the whole consisted of a
iform mass of cells, precisely alike, of an irregular form from
ıtual compression, and full of a granular matter. (Fig. 6.)
Desirous to find whether the tumour were simply laminated, I
›cerated a bit of it in water. It at first unravelled itself slightly,
as to assume a lobulated form; and on continuing the process
several days, the white matter was gradually washed away in
nute particles, and the membrane remained entire. It did not
ıist of parallel laminæ, but was beautifully flocculent, branch-
; out very complexly, from a thicker central portion or stalk.

The preparation so formed has some resemblance to a bit of macerated placenta, but a much closer one to certain sea-weeds, the frond of which is flat, and thickly tufted. (Fig. 3.)

The structure of the "cauliflower excrescence" was now manifest. The basis is a membrane of extreme tenacity, ramifying most complexly, amply supplied with blood, and possessing the power of forming from that blood a whitish "cell-substance," which is deposited in a layer around it. Hence each portion of the membrane forms, after maceration, a kind of lobule or flat villus; but in the recent state, these adhere closely together, so as to give the whole tumour a nodulated aspect. An idea of the arrangement of the parts may be obtained from an inspection of Fig. 1, *b*, which represents a section of the small nodule removed by the speculum. There is there seen an internal or principal portion of the membrane, from which spring the smaller divisions, while it is in the latter that the white matter is formed.

In about a week, the ligatured mass was removed by the section of a small pedicle which still remained. There was no bleeding, and the woman left the hospital free from discharge. The tumour when removed, was in part putrid, about two inches across, smooth, gelatinous, and dotted with blood on the surface, having lost its irregular form; while the portion furthest from the ligature was flocculent and filamentous, resembling that which I had macerated in water, and evidently, like it, consisting of the membrane alone, freed from its white envelope.

It will now be easily understood why in many of Sir C. Clarke's cases, nothing could be found after death but a filamentous tissue: for although in this instance the tumour was possessed of considerable firmness, it is very conceivable that in other cases, the white matter may be so soft, as to be washed quite away in the discharges, and leave no trace behind.

I conceive, therefore, that the white substance, which constitutes the bulk of the structure, is formed by the membrane as a matrix, and from the blood with which that membrane is supplied, by a change in the corpuscles. I had no opportunity of examining the watery discharge so characteristic of this disease; but I believe it will be found to flow from the white substance directly, probably in consequence of the bursting of the external layer of cells, they being as quickly reproduced within; that thus a constant drain from the blood is going on, made more exhausting by occasional actual hemorrhage when the tumour happens to be congested or accidentally injured.

Sir C. Clarke supposes the structure of the tumour to be analogous to that of nævus or the placenta; the above description shows that it is not exactly so; that besides the vascular tissue, it is composed of a peculiar substance: what then is this peculiar

matter? As the watery discharge seems to arise from rupture of the cells, and as it is very copious, the growth of this matter must be rapid; and indeed those who have described the disease, have stated, that where uncompressed, it increases very quickly. It is lardaceous, or cerebriform, and in short has all the characters of the softer cancer. The supposition of its being malignant agrees with the expressed opinion of the best authorities, among whom I may instance the experienced Dr Johnson of the Dublin Lying-in Hospital; with the cachectic aspect of the patient, the subject of the tumour I have been describing, who has exactly the "cancerous look;" with the fact that no cause for the malady has yet been traced, (Clarke;) and above all, with its inveterate nature, and constant return after removal by ligature. It may, says Sir C. Clarke, occur at the age of twenty, and this is a point of agreement with the softer cancers; it is accompanied by no pain, not even on the application of the ligature, and thus differs from the harder cancer, or scirrhus; so perhaps we may conclude that it is a peculiar form of the encephaloid disease. But a very peculiar form it certainly is; as far as I know, there is no malignant tissue which resembles it in the mode of growth; possibly our acquaintance with its structure may hereafter throw some light on the pathology of such tissues; at any rate, the cauliflower excrescence affords a beautiful example of growth by imbibition, *from* the blood, but *beyond* the capillaries.

It is obviously a disease which cannot spread by simple germs, as ordinary cancer is supposed to do; for, in order to its growth, a regularly formed membrane is necessary, and not merely active cells; and this consideration renders more probable the success of the operation of removal of the tumour with the portion of the os uteri from which it grows;—an operation which has proved beneficial in the hands of Professor Simpson. (*Edinburgh Medical & Surgical Journal*, Jan. 1841.) To the treatment by local depletion, astringents, and rest, described by Sir C. Clarke, no additions appear to be suggested by the foregoing description. In this, if in any, malignant disease, may such means be employed with the hope of doing good, and they appear to have been successful in some of Sir Charles' cases.

I have not till now noticed another circumstance in the anatomy of this tumour, from a persuasion that it was a deviation from the usual structure of the excrescence. On making a section of the portion removed by ligature, it was seen not to be wholly formed of the peculiar tissue I have been describing, but to have a central basis of a firm fibrous character, from the external surface of which spring the laminated folds of the vascular membrane. This fibrous mass was red and very vascular. It is difficult to form a correct opinion, without examining the tumour

in situ; but I should be inclined to suppose this to have been a polypous growth, probably a hypertrophy of the neck of the uterus, from which the proper cauliflower excrescence sprung, as it usually does, from the uterus itself. The plate given by Sir C. Clarke, as well as several preparations of the cauliflower excrescence in the collections of Drs Johnson and Montgomery of Dublin, preclude the idea that the fibrous mass is an essential part of the disease; and I am the more persuaded that it was merely a polypous hypertrophy of the neck of the uterus, because of its great resemblance to a tumour which was undoubtedly of that nature, and which was removed from a woman at the same time that the patient, whose case I have been describing, was under treatment.

Description of Figures.

Fig. 1. Magnified three diameters.
a. Nodule removed by the speculum to show the external surface.
b. Section of the same, to show the peculiar distribution of the vascular membrane.

Fig. 2. Magnified six diameters. A thin section of a portion of the tumour, showing the thicker white, and interposed vascular membranous layers.

Fig. 3. Magnified two diameters. Ilocculent appearance of the membrane after maceration.

Fig. 4. Cells and corpuscles of the membranous layer. Magnified about 250 diameters.

Fig. 5. Cells of the white layer, 250 diameters.

Fig. 6. A portion of the membrane with its cells attached to some parts. Magnified about 150 diameters.

Fig 1

Fig 2

Fig 3.

Fig 4.

Fig 5

Fig 6

A.A. del. Geo Ashman sc.

Structure of the Cauliflower Excrescence of the os uteri.

PART SECOND.

REVIEWS.

The Evolution of Light from the Living Human Subject. By Sir Henry Marsh, Bart., M.D., M.R.I.A., *&c. &c.* 8vo, pp. 59. Dublin: William Curry, jun. & Co., 1842.

The author informs us in his preface that "this essay was read at an evening meeting of the King and Queen's College of Physicians, in November 1838. On the 10th of June in the following year, he brought the subject before the Royal Irish Academy, and an abstract of this paper was published in the Proceedings of that body in the year 1839." In the present publication some additional matter of a very curious and interesting nature has been added. We have neither leisure nor space to follow Sir Henry through the first part of his paper, in which, after some preliminary matter, he enters into the general question of animal luminousness; but from his statements regarding the evolution of light from the human subject, we select the following passage; and recommend a perusal of the memoir itself, to those who are interested in the topics of which it treats.

"Teidmann, in his '*Comparative Physiology*,' thus expresses his opinion:—'Animal luminousness would seem to depend on a matter, the product of the changes of composition accompanying life, and, to all appearance, secreted from the mass of humours by particular organs. This liquid probably contains phosphorus or an analogous combustible substance, which combines with the oxygen of the air or of aërated water at a medium temperature, and thus produces the disengagement of light. The preparation and secretion of this substance are acts of life, which change, augment, or decrease by the influence of external stimulants, whose action on the animals modifies their manifestations of life. But the phosphorescence itself depends on the composition of the secreted matter, and cannot be regarded as a vital act; because, on certain occasions, it continues for whole days, and even after the death of the animal.'

"Dr Coldstream believes 'that in many, perhaps in all luminous animals, both terrestrial and marine, the light emitted is the consequence of an evolution of an imponderable agent by the nervous systems of the animals, just as the electrical fishes give their shock without the interposition of any visible or ponderable secretion. In this view we may regard the luminous organs as playing the same part in relation to the evolution of light as the electrical organs of the torpedo do to the production of the shock. The single fact of luminousness continuing in the organs or in their effused fluids,

after they have been removed from the body of the animal, seems to point to a great difference existing between the two classes of phenomena which we have just compared, in certain animals,—namely, when the phosphorescence continues after death, and when, as in some delicate acalephæ, the brightest radiance is emitted in momentary fitful flashes. But it may be that this difference is more apparent than real; for the fact may be explained by supposing that a phosphoric substance really does enter into the composition of the light-giving organs; and yet we may with great probability conjecture that *it* is not the *chief* agent in causing the phenomena of luminousness.'

"With respect to the uses of this remarkable property little is known with any degree of certainty. In insects it has been supposed by most observers to be connected with and subservient to the functions of reproduction. Others have conjectured that the light may in some instances be a means of defence; and M'Culloch has suggested that in marine animals it may be a substitute for the light of the sun in the depths of the ocean.

"In particular states of the atmosphere, the hair of many animals, under the influence of friction, emits abundantly electric sparks with a crepitating sound. This phenomenon may be observed in the domestic cat, and even human hair frequently emits electric sparks when briskly rubbed or brushed.[1]

"Electric sparks, accompanied with a crackling noise, have also been seen to issue from the skin of some individuals when rubbed lightly and quickly with a linen cloth. An instance is related by an Italian physician, of a lady of Verona, from whose limbs 'sparks of fire flew out plentifully as often as they were lightly rubbed with linen.' He adds, that 'oftentimes having rubbed her hands upon her sleeve, she observed a flame running about, as fired exhalations are wont to do.'

"According to the same writer, similar phenomena were observed on the person of a bookseller at Pisa, when the skin of his arms and back was rubbed with linen. I have myself seen two individuals in whom this phenomenon was in a remarkable manner manifested.

"Having now briefly referred to some of the most striking instances of luminousness throughout the extended range of inorganic and organic matter, it remains for me to state the very remarkable facts which form the chief object of this communication. The luminous appearances I am about to describe were observed only when disease had made deep ravages in the system. The following is the statement which first drew my attention to the consideration of this subject:—

"'It was ten days previous to L. A.'s death that I first observed a very extraordinary light, which seemed darting about the face, and illuminating all around her head, flashing very much like an aurora borealis. She was in a deep decline, and had that day been seized with suffocation, which teazed her much for an hour, and made her so nervous that she would not suffer me to leave her for a moment, that I might raise her up quickly in case of a return of this painful sensation. After she settled for the night, I lay down beside her, and it was then this luminous appearance suddenly commenced. Her maid was sitting up beside the bed, and I whispered to her to shade the light, as it would awaken Louisa. She told me the light was perfectly shaded. I then said, "What can this light be which is flashing on Miss Louisa's face?" The maid looked very mysterious, and informed me she had seen that light before, and it was from no candle. I then inquired when she had perceived it; she said that morning, and it had dazzled her eyes, but she had said nothing about it, as ladies always considered ser-

[1] I have observed this phenomenon frequently in my own person; always, however, when the east wind prevails, when the atmosphere is dry, and the barometer unusually high.

vants superstitious. However, after watching it myself half an hour, I got up and saw that the candle was in a position from which this peculiar light could not have come, nor, indeed, was it like that sort of light; it was more silvery, like the reflection of moonlight on water. I watched it for more than an hour, when it disappeared. It gave the face the look of being *painted white* and *highly glazed*, but it danced about, and had a very extraordinary effect. Three nights after, the maid being ill, I sat up all night, and again I saw this luminous appearance when there was no candle nor moon, nor, in fact, any visible means of producing it. Her sister came into the room and saw it also. The evening before L. A. died, I saw the light again, but it was fainter, and lasted but about twenty minutes. The state of body of the patient was that of extreme exhaustion. For two months she had never sat up in the bed. Many of her symptoms varied much from those of other sufferers in pulmonary complaints whom I had seen, but the general outline was the same. Her breath had a very peculiar smell, which made me suppose there might be some *decomposition* going forward.'

"The fact is certain, the source whence derived authentic, the circumstantial detail clear and conclusive. The person from whom I derived the knowledge of this interesting fact, is one of a clear head, superior power of observation, and utterly exempt from the distortions and exaggerations of superstition. The young lady about whose person these luminous appearances were manifested, I had seen several times before her return to the country; her lungs were extensively diseased; she laboured under the most hopeless form of pulmonary consumption.

"Extraordinary as the foregoing case may appear, it is not without parallel. A few months since, I was in attendance upon a young lady who was in the last stage of pulmonary consumption. She had read in the newspapers a brief notice of the communication which I had, a short time previously, brought before the College of Physicians, upon the evolution of light in the living human subject; and feeling deeply interested in so remarkable a phenomenon, had, more than once during my visits, directed her conversation to that subject. It is no less remarkable that she should, in her own person, have subsequently exhibited the very same phenomena. The following statement I received from her sister:—

"'About an hour and a half before my dear sister's death, we were struck by a luminous appearance proceeding from her head in a diagonal direction. She was at the time in a half-recumbent position, and perfectly tranquil. The light was pale as the moon, but quite evident to mamma, myself, and sister, who were watching over her at the time. One of us at first thought it was lightning, till shortly after we fancied we perceived a sort of tremulous glimmer playing round the head of the bed; and then recollecting we had read something of a similar nature having been observed previous to dissolution, we had candles brought into the room, fearing our dear sister would perceive it, and that it might disturb the tranquillity of her last moments.'

"An appearance of the same kind has been observed round the person and in the room of a man who fell a sacrifice to lingering disease in a remote part of the south-west of Ireland. All the witnesses agree in having seen the light; many, however, have come to the conclusion that it was altogether caused by supernatural agency. Even educated persons have persuaded themselves, and have endeavoured to persuade others, that these luminous appearances, in the room and around the person of this dying man, were proofs of a miraculous interposition, and evidences of divine favour and acceptance. Would it not be well if those who adopt and promulgate such an interpretation of this remarkable phenomenon, were to pause for a moment and consider, first, whether a reference to the known and established laws of nature be not fully capable of accounting for these phenomena; and whether, in the second place, revealed truth be not founded on a basis too firm to

need,—nay, whether it would not even repudiate the aid of supposed miracles, the purport and object of which it would be no easy task to comprehend?

"Many of the accounts I have received of this case have been written under the influence of the firm persuasion that the light seen arose not from natural, but from supernatural causes. It is certain, however, that a luminous appearance in this instance has been by many distinctly and repeatedly observed. I have been informed by Dr Bull, who resides in Cork, that several of his acquaintance, on the truth of whose statements he could rely, went for the purpose, and saw distinctly the luminous appearances which had excited such general attention in the south of Ireland. An authentic report of this interesting phenomenon having been subsequently published by Dr Daniel Donovan, in the *Dublin Medical Press*, January 15, 1840, I shall extract from his statement the most important particulars of the case. The name of the patient was Harrington, and he resided in a small but populous village on the harbour of Glandore, one of the most picturesque spots on the southern coasts of Ireland. Dr Donovan states, 'I was sent for in December 1828, to see Harrington; he had been under the care of my predecessor, and had been entered on the dispensary book as a phthisical patient, and on reference to my note-book, I find that the stethoscopic and other indications of phthisis were indubitable. He was under my care for about five years, during which time, strange to say, the symptoms continued stationary, and I had discontinued my attendance for about two years, when the report became general that mysterious lights were every night in his cabin. The subject attracted a great deal of attention, and, like every thing else in Ireland, at once assumed a sectarian complexion; some attributing the lights to the miraculous interposition of Heaven, others to the practice of the black art. Not regarding these views as offering an explanation of the mystery, I determined to subject the matter to the ordeal of my own senses, and for this purpose visited the cabin for fourteen nights, and on three nights only did I witness any thing unusual,—once I perceived a luminous fog resembling the aurora borealis; and twice I saw scintillations, like the sparkling phosphorescence sometimes exhibited by the sea infusoria. From the close scrutiny I made, I can with certainty say that no imposition was either employed or attempted.' Dr Donovan adds, 'I am of opinion that the appearances which I witnessed were dependent on the presence of phosphorescent matter in the expiratory and perspiratory secretions. The property which phosphuretted hydrogen has of undergoing spontaneous ignition when brought into contact with atmospheric air is well known; and as the components of which this is made up exist in abundance in the human body, it is not outstretching the bounds of probability to suppose that it is sometimes generated in the living system.'

"Dr Donovan has lately informed me that the luminous appearances were not at any time visible to him on the person of the patient; the scintillations which he has described above were perceptible immediately over the head of his bed, on a wall composed of stone and clay mortar. The luminous fogs passed in streams through the apartment in which the sick man lay, and on one occasion Dr Donovan fancied that he saw a meteor, like a falling star, suddenly pass through the house. Appearances of a similar nature are said to have been seen about the person of a woman named Pallister, who died some time ago in the neighbourhood of Hull; but I have not been able to procure any well authenticated report of the phenomena.[1]

"For the following very interesting and important fact, I am indebted to Dr William Stokes. I shall give it in his own words:—'When I was re-

[1] "Can it be that the soft halo of light, thrown around the head by the ancient masters in scripture paintings, owes its origin to this appearance observed, but never recorded?"

siding in the Old Meath hospital, a poor woman labouring under an enormous cancer of the breast was admitted. The breast was much enlarged, and presented a vast ulcer with irregular and everted edges, from all parts of which a quantity of luminous fluid was constantly poured out. Upon being asked whether she suffered much pain, she answered, "Not now, Sir, but I cannot sleep watching this sore, which is on fire every night." I directed that she should send for me whenever she perceived the luminous appearance, and on that night I was summoned between ten and eleven o'clock. The lights in the wards having been then extinguished, she was sitting leaning forward, the left hand supporting the tumour, while with the right she every now and then lifted up the coverings of the ulcer to gaze on this, to her, supernatural appearance. The whole of the base and edges of the cavity phosporesced in the strongest manner. The light was steady. I directed that the ulcer should remain open, while I retreated gradually, keeping my eyes fixed on the light, which I found distinctly visible at the end of the ward, which must have been more than twenty feet from her bed. The light within a few inches of the ulcer was sufficient to enable me to distinguish the figures on a watch dial. I have no very distinct recollection of the colour of the light, but I remember that its intensity was variable, it being on some nights much stronger than on others.'

"Of all the enumerated sources of phosphorescence in bodies inorganic or organic, to which do the facts now detailed bear the strongest and closest analogy? Decidedly, I think, to the phosphorescence generated in organic bodies at the period of incipient decomposition. But it may be said, 'can such a state of things exist? Can any process analogous to decomposition take place in the human frame, whilst yet the living principle remains?' Unquestionably it may. For what, after all, is disease? Is it not the first step towards dissolution? Does it not imply that, to a certain extent, however slight that may be, the vital property is impaired and altered, and that unless combated by art, and stayed in its progress by the restorative power implanted in the living system, it will inevitably lead to that condition which gives to the chemical actions the ultimate mastery over the vital?

"Will not this partially impaired power of vital action help to explain the cause of many of those extraordinary solid compounds and fluid secretions which, during the progress of disease, are developed? May not a portion of the living frame be undergoing disintegration, while yet the vital functions, though with impaired energy, maintain their controlling influence over the remainder? I doubt it not; and I do believe that while the flame of life still flickeringly burns on, the diseased or injured part may be reduced to that state which in animal matter is perfectly analogous to the first and earliest stage of decomposition; and, other conditions existing, light may be evolved precisely in the same manner as this phenomenon is produced in the dissecting-room, in burial-grounds, and in marine animals during the early stage of decay. It is not improbable that all cases of this kind may ultimately be referred to one common head,—to chemical actions in peculiar conditions evolving light through the instrumentality of electrical phenomena.

"Hitherto few instances of phosphorescence in the higher animals have been observed, or at least recorded; no doubt a luminous appearance has been observed in the renal secretion, and in the ova of lizards, but the evolution of light from the living bodies of the higher animals has generally escaped observation. Between the facts now recorded, and the state of the body when *spontaneous combustion* takes place, there is a very striking analogy. In one case of spontaneous combustion which is related on good authority, a lambent flame was distinctly seen surrounding the person who suffered from the mysterious and, we may justly call it, dreadful disease; this was observed while the patient was still alive, for he lived for four days after the occurrence of the spontaneous combustion, and was able to give an accurate ac-

count of his earliest sensations. This is an important fact, and bears directly on the subject we are discussing; before internal combustion can take place, the vital property must have nearly lost its controlling influence, as already explained, and chemical action, before death, must have begun to predominate. This explanation is corroborated by the following case, which is of recent date. A man, ill for fourteen days, was admitted by M. Bally into the Hôtel-Dieu; he died on the night after his admission, and on examination eight hours after, exhibited the following appearances:—The whole surface of the body was emphysematous, of a violet colour, and studded with a vesicular eruption in detached spots, the vesicles being filled, some with a reddish serum and gas, others with gas alone, the latter being of a white colour. The abdomen was also much distended, the gas occurring not within the intestines, but in the cavity of the peritoneum. Upon cutting into any emphysematous part, a gas escaped, which was set on fire by the flame of a candle; and from a perforation made in the abdomen a gas issued, which was ignited in a similar manner, and burned with a bluish flame.

"This case, which was communicated to the Académie Nationale de Médecine, excited a good deal of discussion, and was considered by many as proving that the putrefactive process, from which alone they conceived the gases could be derived, may set in before death.

"I would gladly enter upon, and detail the various recorded instances of spontaneous combustion, but it is unnecessary, as I can refer my readers to an excellent and truly scientific paper on this subject written by Dr Apjohn, and published in the *Cyclopædia of Medicine*.

"It appears to me in the highest degree probable that, were accurate observations made, a luminous appearance would always be discovered around or upon the persons of those in whom spontaneous combustion was taking place.

"I shall conclude by describing an experiment of considerable interest as connected with our subject, which was, I believe, first performed by Magendie, and which has been lately repeated under my own inspection.

"Half an ounce of olive oil, in which two grains of phosphorus were dissolved, was injected into the crural vein of a dog. Before the syringe was completely emptied, a dense white vapour began to issue from the nostrils, which became faintly luminous on the removal of the lights. An additional half ounce of phosphorated oil, of equal strength, was then injected, and the lights extinguished. The expirations immediately became beautifully luminous, resembling jets of pale-coloured flame pouring forth from the nostrils of the animal. This extraordinary spectacle continued until the death of the dog, which occurred in about five minutes. In this experiment, the rapid transit of the injected fluid from the vein, in the remote extremity, to the lungs, and its instantaneous expiration in the gaseous form, were very remarkable. This experiment goes far to show how large a share the presence of phosphorus has in the production of many luminous phenomena.

"The phenomenon of the evolution of light from the living human subject is one which, it must be conceded, is of rare interest; it remains open for investigation, and will, I hope, be further and successfully prosecuted." Pp. 42—59.

A Practical Treatise on the Management and Diseases of Children. By RICHARD T. EVANSON, M.D., *Professor of Medicine in the Royal College of Surgeons, Ireland; and* HENRY MAUNSELL, M.D., *Professor of Political Medicine in the Royal College of Surgeons, Ireland.* Fourth edition, revised and enlarged. 8vo, pp. 570. Dublin: Fannin & Co., 1842.

The rapid sale of three editions, sufficiently indicates that the work of Drs Evanson and Maunsell has met with a large share of that approbation which it so richly merits. The style of composition, no less than the matter of the work, deserves peculiar commendation in these times, when British medical works are frequently disfigured to such an extent by French and other barbarisms, as to be fully intelligible only to those acquainted with the continental languages; or at least to be most offensive to every one desirous of speaking and writing the English language correctly. As a plain and practical treatise on the diseases of children, we know of no better work. On some subjects, perhaps, there is an unnecessary brevity, and one or two affections which we think ought to have been treated of, are not noticed. In making this remark, we must at the same time indicate our entire approval of the absence of all wearisome parade of unprofitable research, and lengthened array of conflicting doctrines. The book is the result and record of the experience of two talented physicians who have long and admirably applied great powers and opportunities of observation to the diseases of which they treat, accompanied with occasional notices of the opinions of others, and references, (though not so numerous as might be desirable,) to more ample sources of information on particular subjects. The work is therefore essentially elementary, and cannot be regarded as supplying all the information necessary to the practitioner, regarding infantile diseases; but as the best introduction to the study of this most difficult class of maladies,—as a clear and sound text-book for the student, and a safe guide to the young practitioner,—we confidently recommend it. We say this without any disparagement of the useful and practical writings of Underwood, Marshall Hall, Billard, Valleix, and others. We must refrain from making any extracts, as our review department will occupy a large proportion of our next Number. This we regret the less, as the work of Drs Evanson and Maunsell is one which every practitioner who is not already possessed of it, ought forthwith to procure.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

On the Blood Corpuscles of British Ophidian Reptiles; with some Remarks on the Shape of the Corpuscles of the Oviparous Vertebrata. By George Gulliver, F.R.S.

While the blood-discs of the viper and of the snake have the most common elliptical shape, its length being rather less than twice its breadth, the discs of the slow-worm are peculiar in being so much elongated, that in them the length of the ellipse is considerably more than twice its breadth. The average size of the corpuscles are stated as follows; and the author took occasion to remark, that all his microscopical measurements were invariably expressed in vulgar fractions of an English inch, however they might have been set up in types for the sake of convenience.

	Long Diameter.	Short Diameter.
Slow-worm, (*Anguis fragilis*, Linn.) . .	$\frac{1}{1178}$	$\frac{1}{2888}$
Snake, (*Natrix torquata*, Ray.) . . .	$\frac{1}{1371}$	$\frac{1}{2137}$
Viper, (*Coluber Berus*, Linn.) . . .	$\frac{1}{1374}$	$\frac{1}{1855}$

The author remarked, that though the blood-discs of birds and reptiles, when dried on glass, were generally somewhat smaller than in the vertebrata, the blood-discs of mammalia, on the contrary, were for the most part slightly larger when dried precisely in the same manner, than when floating in their own serum, which he thinks may result from the greater delicacy and softness of the last-named corpuscles, and which he regards as more susceptible of contraction and modification in form than the former. The envelopes of the blood corpuscles of fishes were stated to be remarkably delicate and evanescent.

Some time since, M. Mandl, who justly stated that all observers had agreed, that the long diameter of the oval blood corpuscles of vertebrate animals was never more than one-and-a-half or twice the short diameter, described the corpuscles of the crocodilidæ as forming an exception to this rule, since he found that the corpuscles of *crocodilus Lucius* had the form of a very elongated ellipse. Mr Gulliver, however, ascertained that the blood-discs of *crocodilus acutus* and *champsa fissipes* are not thus elongated, but have the common elliptical form, as shown in the *Proceedings of the Zoological Society*, November 10, 1840. Subsequently, Mr Gulliver has shown, that though the usual figure of the blood-discs of birds, &c., is an ellipse, of which the long diameter is from $1\frac{1}{2}$ to 2, considering the short diameter as 1, yet there are many exceptions. In other words, the corpuscles may either be comparatively long and narrow, or short and broad; of the former shape, the corpuscles of the snowy owl, passenger pigeon, great butcher bird, nightingale, and snow bunting, are examples; and the corpuscles of the Java spar-

row, and of some other granivorous birds, are examples of the latter shape. The measurements of the corpuscles of birds, in the appendix to *Gerber's Anatomy*, were referred to in illustration; and as there stated, in birds the nucleus of the blood-disc, when exposed by acetic acid, is generally a more elongated ellipse than the envelope, though to this rule the author notices some exceptions, especially in the gallinaceous birds.—Abstracted from *Paper read to the Zoological Society of London*, August 9, 1842.

On the Blood Corpuscles of the Ibex, (Capra Caucasica?). By George Gulliver, F.R.S.

Before the author's discovery of the singularly minute size of the blood-discs of the musk-deer, (see *Dublin Medical Press*, November 27, 1839; *Phil. Mag.*, and other journals for December of the same year; *Med.-Chir. Trans.*, v. 23,) those of the goat were the smallest known. He now announces that the corpuscles of the ibex are slightly smaller than those of the goat, and therefore intermediate in size to the corpuscles of the goat and those of the musk-deer. The following average dimensions of the discs were given:—

Goat, (*Capra Hircus*, Linn.) . . $\frac{1}{1111}$
Ibex, (*Capra Caucasica*? Gmel.) . . $\frac{1}{1155}$
Musk-deer, (*Moschus Javanicus*, Pallas,) . $\frac{1}{1955}$

—Abstracted from *Paper read to Zoological Society of London*, August 9, 1842.

Deformity of the Genital Organs in a Soldier. By M. Fenolio.

A young soldier presented himself before the council of war, for the purpose of being dismissed the army. He had a feminine voice, and no beard on his face; his skin was white and fine, his shoulders narrow, and his pelvis large. The mammæ were considerably developed, but had only been so for the last two years; they evidently appeared to contain a glandular body. Upon examining the genital organs, they were found in the following state. On each side of the penis, which was very small, and reduced thereby to the glans, was a fold of skin containing a testicle, ascertained to be so by contact and pressure. The penis had neither a urethra nor corpora cavernosa; immediately below it, however, was an opening, through which the urine flowed. On questioning him whether his penis ever erected, or whether he ever felt any difference in his feelings when in company with males or females, he answered, no. He had great repugnance, amounting to female modesty, to undress before people.

A host of cases similar to the above, at least in so far as regards the genital organs, is to be found in the different periodicals; this one, however, is singular, in having the mammæ well developed in an individual who, from the presence of testicles, evidently belonged to the male sex. M. Fenolio, who was unable to account for this peculiarity, asks, if in this case there was no uterus, even although nothing indicated its presence.—*Giornale delle Scienze Mediche;* taken from *Gazette Méd. de Paris*, 13th August 1842.

Report on the Results obtained by the Use of the Microscope in the Study of Human Anatomy and Physiology. Part I.

By James Paget, Demonstrator of Morbid Anatomy at St Bartholomew's Hospital.

(*Continued from page* 709.)

XIV. Nerve.[1]—a. *Structure.* 1. *Cerebro-spinal nervous fibres.* In a nerve belonging to this system, one finds numerous fibres enclosed in a common membranous sheath, or *neurilemma.* The latter is composed of fasciculi of fibro-cellular tissue, closely woven together in a generally longitudinal direction, and somewhat more wavy than the filaments in most varieties of this tissue; so that they give the nerve a satin-like glistening aspect. Commonly also it has a characteristic striated appearance, (the striæ being transverse or oblique, or even spiral, from a close alternation of bright and dark streaks, which are due to the fibres of the neurilemma being wrinkled,[2] or to the primitive nervous fibres within it being arranged in a slightly tortuous manner,[3] and which are destroyed by stretching and by maceration.

Within this common sheath the nervous fibres are assorted in subordinate bundles of nearly equal size, each of which is enclosed in a separate secondary sheath, continued from the external one, but composed of much finer and less perfectly developed tissue. Within each of these there are again subordinate divisions of the fibres similarly enclosed, till at last, arriving at the primitive fibres, each of these is invested by a covering analogous to the outer neurilemma, but possessing a fineness of structure proportioned to the minuteness of that which it envelopes. It is a most delicate membrane, exactly pellucid, and, in general, seems structureless; but Schwann[4] believes he has seen elongated nuclei in it, and Valentin[5] says he can, in favourable circumstances, see that it has a fibrous appearance, "as if two sets of fibres crossing one another ran screw-like round the nervous tube;" a view which remarkably confirms the observations of Dr Martin Barry.[6] A longitudinal arrangement of fibres is also sometimes discernible.[7] The proper substance of the nervous fibre, which is contained within the sheath just described, is, according to Valentin,[8] a clear, opalescent, viscous, homogeneous, oil-like substance, without any trace of corpuscles, vesicles, or fibres. Henle,[9] confirming, on the whole, this account, describes each nervous fibre as resembling, in the living or just-dead state, a fine cylinder of clear glass, being pellucid and colourless, and having simple, well defined, dark edges. But they agree that it is only immediately after removal that this simplicity of composition can be discerned; for very quickly, and especially when they are immersed in water, the fibres, as if by a coagulation of their substance, assume the appearance of

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[1] A better example of the progress of minute anatomy in four years cannot be found than in a comparison of the following account with that in a review, in vol. vi. of this Journal, of what was known on the same subject in 1838.

[2] Prevost and Dumas, Valentin (Ueber den Verlauf und die letzten enden der Nerven. Nov. Act. Acad. Nat. Cur. 1836, p. 66.)

[3] Fontana, (sur le Venin. &c.;) Burdach, (Beitr. zur Mikrosk. Anat. der Nerven, Ann. des Sc. Nat. 1837, p. 117;) Henle, (Allg. Anat. p. 616.)

[4] Mikrosk. Untersuch.

[5] In Sömmering, (vom Baue des mensch. Körpers, bd. v. p. 5.)

[6] Henle has a less distinct description of a similar arrangement of interlacing spiral fibres around the primitive fibre, (Allg. Anat. p. 620.)

[7] Rosenthal, Valentin. Valentin, (Repertorium, iii. 262,) believes he has sometimes seen movements as if produced by ciliæ on the inner surface of this primary sheath; but he has not much confidence in his observation, (Sömmering's Anatomie, bd. v. p. 6;) and it has not been confirmed by others.

[8] In Sömmering, p. 5.

[9] Allg. Anat. 617. See also Klencke, Ueber die Primitivnervenfasern.

being composed of two different materials.[1] In this state their edges are marked by dark parallel outlines, within which again are two internal lines, parallel to them and to one another, which make each fibre look like a tube.

Regarding this last as their natural condition, Remak,[2] whose description agrees very nearly with that of Fontana,[3] considers each fibre as a delicate contractile tube, containing a pale flattened band, (the *primitive band,*) which, he thinks, is composed of several very fine solid filaments. Rosenthal,[4] also, whose description was written under the guidance of Purkinje, regards each fibre not as homogeneous, but as composed of an *axis-cylinder*, of moderately firm nervous matter, enclosed in a cortical portion of softer substance, (*vagina medullaris;*) and nearly the same view is entertained by Hannover[5] and by Schwann. Dr Martin Barry, on the other hand, believes that the nervous fibre possesses a structure analogous to that of the primitive fasciculus of muscular fibrils; that the outer white substance, (*vagina medullaris,*) is a fasciculus of double spiral flat filaments, and the central portion, (*Remak's band,*) a filamentous material from which they are continually being given off.

Whatever be the true original structure of the nervous fibre, its cylindrical is soon exchanged for a beaded or varicose form, from the accumulation of the contents into separate masses, which dilate small portions of the sheath while the intermediate spaces collapse; and these changes proceeding, the contents of the sheaths, either spontaneously or by the influence of the fluid in which they are placed, assume a granular or curdy appearance, and may be easily pressed out. From the supposition that these states are natural, arose the errors in the first descriptions of minute nervous structure by Ehrenberg[6] and others. The changes take place with the more facility, the more coarsely the fibres are dissected, and the finer and more delicate their investing sheaths are.[7] They are therefore quickly produced in all the fibres of young subjects, and in those of the brain and spinal cord, and of the nerves of peculiar sensation at all ages. Hence Ehrenberg was led in his first essay to make a marked distinction between the *varicose fibres* in these nerves, and the cylindrical fibres of others; and although his own later observations, and those of all others, prove that all nervous fibres are alike, in their natural state, cylindrical, yet, as Remak has observed, the degrees of facility with which they severally assume the beaded form, may serve to distinguish them as well as if they possessed it during life.

The size of the cerebro-spinal primitive nervous fibres is variable, and the same fibres have not the same diameter through their whole length. They are generally largest at their peripheral extremities and in their course along the nervous trunks, where the majority measure, in round numbers, from 1-2000th to 1-3000th of an inch in diameter.[8] They gradually decrease in

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[1] A fact remarkably confirmatory of this view, and of which the first notice is due to Mr Clift, is the perfect transparency of the living or just-dead retina; it assumes the gray opacity by which it is generally known, in the same time as the change here described is supposed to take place in the nervous fibres.

[2] Obs. Anat. et Micr. de Systematis Nervosæ Structurâ, Froriep's N. Notizen, Juni 1838, and in several other papers. See also B. and F. M. R., vol. vii. p. 500.

[3] Sur le Venin de la Vipere, &c.

[4] Diss. Inaug. de formatione granulosâ in nervis, &c., in Valentin's Repertorium, 1840, p. 76, &c.

[5] Müller's Archiv. 1840, p. 552.

[6] Beobacht. einer auffallenden . . . Struktur des Seelenorgans, Berlin, 1836.

[7] On the influence of particular agents in producing these changes, see Burdach, (*l.c.* Valentin, and Henle, who also gives a full account of the evidence on all the controverted subjects.

[8] Wagner and Krause, (Müller's Physiology, by Baly, i. 597;) Nasse, (Müller's Archiv. 1839, p. 245.) The measurements of several others agree. For comparison, see Ehrenberg, (*l.c.*) and Wagner, (in Burdach's Physiologie, bd. v.)

size as they approach the brain, whether directly or through the medium of the spinal cord; and in the brain itself they continue to grow less as they pass through the medullary to the cortical part, so that in the former they measure (on a similar general average) from 1-7000th to 1-8000th, and in the latter not more than 1-14000th of an inch.[1] The fibres of the olfactory and optic, and, in a less degree, those of the auditory nerves, are equally small in every part of their course, and thus resemble, in size as well as in structure, those portions of the other nervous fibres which are continued into the nervous centres. Remak[2] also observes, that the primitive fibres for common sensation are smaller, and become more readily varicose than those for motion; and Henle[3] confirms this in general, but adds, that there is no distinct line of demarcation between the two sets, for that in all mixed nerves fibres of every gradation of size occur.

2. *Organic or sympathetic nervous fibres.* The general neurilemma is tougher in this than in the preceding class of nerves, and has a layer of circular fibres in addition to the longitudinal ones. The several fibres in a nervous trunk are seldom assorted in secondary or more subordinate fasciculi.[4]

In the nerves of this system there are, besides the fibres supposed to be peculiar to them, many of the same kind as those already described; and the latter, which are always finer than the average of the ordinary nervous fibres, vary in their proportionate number in different parts. In the roots of the sympathetic they do not form more than one-fourth or one-fifth of the fasciculus; in most of the nerves proceeding from the ganglia to the viscera they are more numerous; in the main trunks, such as the splanchnic and the cardiac nerves, they greatly predominate; and the ciliary nerves, as well as those of the lachrymal and mammary glands and those which accompany the blood-vessels, are wholly composed of fibres like those of the nerves of common sensation.[5]

The nature of the other and peculiar fibres in the branches of the sympathetic nerves has been much disputed. They are described by Remak,[6] Pappenheim,[7] Müller,[8] and some others as distinguished by their fineness, paleness, and yellowish hue, and by the constant absence of the lateral, dark lines which give the cerebro-spinal nerves the aspect of tubes. Rosenthal and Purkinje[9] consider them to be formed by an axis-cylinder similar to that of an ordinary nerve fibre, and surrounded by a granular nucleated sheath; so that they differ from cerebro-spinal nerve-fibres only in the absence of the outer medullary layer (*vagina medullaris,*) of the nervous substance. Henle thinks they are a peculiar set of nervous fibres arising from the central organs, put into connection in the ganglia, and destined for the contractile fibro-cellular tissue and the blood-vessels. He calls them *gelatinous* nervous fibres, and describes them as pellucid, flat fibres, between 1-5600th and 1-3750th of an inch in breadth, with numerous oval or round nuclei arranged at pretty regular distances on their flat surfaces, and more or less elongated and approaching the characters of other nucleus fibres. Sometimes also, he says, the nerve fibre is split at its extremity like the fasciculus of fibro-cellular filaments in course of development.

On the other hand, Valentin,[10] who is, on both anatomical and physiolo-

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[1] Treviranus, (Beiträge, hft. ii.;) Henle, (Allg. Anat.)

[2] Vorlaufige Mittheilungen, (Müller's Archiv. 1836, p. 145,) and in other papers.

[3] Allg. Anat. p. 669. The difference is most perceptible in comparing the fibres of the anterior and posterior roots.

[4] Henle, *l. c.* p. 630. [5] Ibid. *l. c.* p. 631–2.

[6] Neurologische Notizen; Froriep's N. Notizen, Aug. 1837, and elsewhere.

[7] Die specielle Gewebelehre des Gehororgans.

[8] Archiv., 1839. Jahresb. cciv.

[9] De formatione granulosâ, &c., in Valentin, *l. c.*

[10] Ueber die Scheiden der Ganglienkugeln, &c. (Müller's Archiv. 1839,) and elsewhere.

al grounds, the chief opponent of the notion of a peculiar set of fibres in
organic nerves, regards those which are so described by others as merely
imperfectly developed filaments of fine, fibro-cellular tissue, which are
med into sheaths for the investment, not of collections of nervous fibres,
in other nerves, but of each nervous fibre separately. These sheaths he
lieves to be continued over the fibres from ganglion globules presently to
described.

The conflicting views may be probably reconciled according to the explanation in a recent description by Volkmann and Bidder,[1] which has received confirmation of E. H. Weber. It seems most probable that the fibres scribed by Remak are those of the investing membrane of the true sympastic fibres, as Valentin holds, and which, in old frogs, exactly resemble the mmon wary filaments of fibre cellular tissue. (E. H. Weber.) But the ne sympathetic fibres are still distinct from the cerebro-spinal, and were obably well discerned by Rosenthal and Purkinje. According to Volkmann and Bidder, they are distinguished by their fineness, (their diameter ing constantly about half as great as that of the cerebro-spinal nerves,) eir paleness, the absence under all circumstances of a double contour, the ry small quantity of curd-like contents which they exhibit when decomsed, and their yellowish-gray colour when they lie in bundles. The difrence in size, they add, is so distinct that though both sets of fibres vary to me extent, there is not nearly a complete series of gradations between them.

B. *Course.* The observations of Fontana and of Prevost and Dumas, conmed by those of Müller[2] and others, prove that the nervous fibre is uninrrupted from its central to its peripheral extremity, and that in all that urse there is no anastomosis or confusion of substance between any two imitive fibres—facts proved by both experiment and sight. They have reived additional confirmation from Kronenberg[3] and Valentin,[4] the latter of hom examined particularly the nervous fibres in the recti and other minute uscles of very small animals.

The microscope has also materially assisted Volkmann[5] in proving certain cts respecting the course of nervous fibres which could not have been disrned by ordinary dissection. Such, for instance, is the fact, that in several stances fibres proceed for a certain distance from the centres, and then, witht passing into the substance of any organ, form loops and return again to ne brain or spinal cord; so that different parts of the nervous centres may supposed to be connected by long, nervous fibres, arranged in arches, of hich the extremities are at the centres, and the arcs far external to them. his is the case in the plexus of the descendens noni with the cervical nerves, rough which some branches of the latter ascend to the brain; and probably so in the arched fibres which form the inner border of each optic tract, and ne posterior border of the chiasma; and in those fibres which experiment as nearly proved to proceed in arches from the posterior to the anterior comnns of the cord, through the roots of the nerves.[6] It has thus also been ade not improbable that the two retinæ are connected by similar arcs, both xtremities of which are peripheral; and perhaps there are some other simir instances.[7]

C. *Modes of Termination.* 1. *Peripheral*—This arched arrangement of the

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[1] Verhaltniss des nervus sympathicus zu dem übrigen nervensysteme beim Frosche, &c. in Froriep's N. Notizen, Marz 1842. [2] Physiologie, bd. ii.

[3] De plexuum nervorum structurâ, Berol. 1836, and Müll. Arch. 1837, Jahresb. ii.

[4] Ueber den Verlauf, &c. p. 77.

[5] Beob. und Reflexionen ueber Nervenanastomosen, (Müll. Arch. 1840, p. 510), and l. and F. M. R. vol. xiii. p. 239. See also Appendix B.

[6] Magendie. (Comptes Rendus, Mai et Juin, 1839;) and Kronenberg, (Vers. ueber ie motorische und sensibeln Nervenwurzelen, (Müll. Arch. 1839.)

[7] See Henle, Allg. Anat.

nervous fibres is repeated in the substance of the organs in which they are said to terminate; for, as far as they have been examined, the general, if not the constant, mode of termination is as follows:—After repeated divisions into smaller bundles of fibres, the fasciculi, which consist of from two to six fibres each, form plexuses, whose arrangement bears a general resemblance to that of the elements of the tissue in which they are placed. These are the *terminal plexuses*.[1] Then each fasciculus of the plexus breaks up into its primitive fibres, and each fibre, either after passing over several elementary structures of the containing tissue, or, as in the sensitive papillæ, the iris, &c., after forming a single narrow loop, returns to the same or an adjoining plexus, and pursues its way back to the nervous centre, from which it set out. In other words, each fibre forms an anastomosis or *terminal loop*, with another from the same or a neighbouring fasciculus. There is thus, strictly speaking, no more termination of nerves than of blood-vessels; both alike form circles. The characters of the fibres are scarcely altered in the substance of the organs receiving them; their sheaths become finer, but they are not lost or *laid down*, nor is there any fusion of the nervous into the adjacent substance.[2]

But it is questioned whether this, which is the only really observed arrangement, be a just account of the distribution of the minutest elementary nervous structures. Another view of the whole matter must be taken, if it be true that those which are called the primitive fibres be, as the observations of Treviranus,[3] Remak, and Martin Barry indicate, fasciculi, each containing several fibrils, which, though they are not discernible in the substance of the tissues, may be distributed to their minutest parts. If it be so, the real ultimate arrangement of the nerves is utterly unknown. There are some imperfect observations respecting the distribution of the minuter fibres, by Schwann[4] and Remak.[5] But it must be admitted as a strong argument against the distribution of such finer branches, that the course of those already described as the ultimate fibres is clearly discernible, that they do not appear to give off branches, and that small as the finer divisions are sup-

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[1] Valentin, Ueber den Verlauf, &c., and in B. and F. M. R., vol. xi.

[2] No mention is here made of the cells found near the peripheral distribution of the nerves of the higher senses, and supposed by Valentin and some others to be analogous to the ganglion-globules at the nervous centres; for they are not constant elements in the peripheral nervous structures, and Henle's opinion, (Allg. Anat., p. 664), that they are epithelium-cells covering the layer of the extremities of the nerves, seems more probable than any hitherto offered. Their history may be found in his work, and in the essays on the retina referred to in a following note.

[3] Vermischte Schriften, bd. i. p. 129; and Beiträge, hft. ii. p. 39.

[4] Müller's Physiologie, bd. ii.

[5] Zur Mikrosk. Anatomie der Nerven, &c. In reference to the distribution of the nerves in each organ, it must suffice to refer generally to Valentin's edit. of the 5th vol. of Sömmering's Anatomie, and his treatise Ueber den Verlauf und die letzten enden der Nerven; and to Müller's and Carpenter's Physiologies. For particular organs, the following references may be sufficient:—for the *Retina:* Hannover, (Müller's Archiv., 1840, hft. iii.;) Grube, (ibid. 1840, and Microsc. Journ. 1841, p. 71;) Bidder, (Müll. Arch. 1841;) Remak and Henle, (ibid. 1840;) Gottsche, (ibid. 1834;) Henle, (Allg. Anat.;) and Valentin, (Repertorium, bd. v., &c.) The *Ear:* Wharton Jones, (*Hearing, Organ of*, Cycl. Anat.;) Pappenheim, (Die specielle Gewebelehre des Gehororgans;) Valentin, (Repertorium;) and B. and F. M. R., vol. viii. p. 68. The *Nose:* Treviranus, (Beiträge, hft. ii. p. 56. The *Skin:* Valentin, (Ueber den Verlauf, &c.;) Burdach, (Beiträge, pp. 108, 161;) Breschet, (Recherches sur la Structure de la Peau.) The *Muscles:* Valentin and Burdach, *l.c.* The terminations in the ciliary ligament and iris, the tongue, the blood-vessels, and the teeth-pulps, are also described by Valentin and Burdach. The latter shows that in general, though the rule is not universal, the sensitive nerves terminate in plexuses, or complex loops, the motor in simple loops.

posed to be, they would not be less than the fibres of many other kinds which can be recognised in their respective tissues.

2. *Central.* When the nervous fibres have passed centripetally through the dura mater, the general neurilemma becomes thinner, and there is a still further reduction both in it and in the investment of each fibre when they have penetrated the superficial layer of the brain or spinal cord. In the same progress the size of the fibres gradually diminishes, and the tendency to assume the varicose form on the least injury of the investing membrane increases. Having entered the brain, whether directly or through the medium of the spinal cord, the fibres proceed in bundles, (which are the coarsely demonstrated *fibres of the brain*), towards the cortical substance, forming on their way the most intricate plexuses, but never anastomosing. Arrived at the cortical substance, the fasciculi form plexuses among the gray globules exactly comparable with the terminal plexuses already described; and, at the last, the fasciculi, having broken up into their component fibres or very small collections of them, these form loops in the cortical substance of the brain like the terminal loops in the substance of the tissues.[1]

The white substance of the spinal cord, like that of the brain, is composed entirely of the continued nervous fibres. Bundles of them form intricate plexuses without anastomoses, and have all a general direction towards the brain. As far as the microscope can discern, the fibres, as they ascend, get nearer to the gray matter, being successively overlaid by those which abut upon the cord higher up than themselves; and the cord, as it passes from below upwards, is thus continually augmented by external layers of fibres, till it comes to the medulla oblongata.[2]

It is not probable that either the brain or the spinal cord contains any fibres but such as are continuations from those of the several nerves of the body; of these they form what Valentin has called a *condensed collection.*

c. *Structure of the Gray Nervous Substance.* The general character of this constituent of the nervous centres, is, that it is composed of numerous globules, called ganglion-globules, from 1-300th to 1-1250th of an inch in diameter, which are usually of a spherical or oval form, more or less flattened, and of a reddish colour. Each contains one or more nuclei with subordinate nucleoli, is enclosed in a very fine filamentous investment, and is often marked with superficial spots of pigment.[3] These investments or sheaths of the ganglion-globules are, according to Valentin and others, formed of several strata, of which the exterior consists of a thin layer of fine granular corpuscles, the next of elongated cells with nuclei, and the most interior and thickest, of concentric lamellæ of very delicate cylindrical filaments. By its sheath, each ganglion-globule is isolated from its neighbours; but by the

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[1] Nearly all the minute anatomy of the fibres in the nervous centres is due to Treviranus and Valentin. The arrangement in plexuses has been generally confirmed. It was first minutely described by Dr Macartney in 1833, in his "Observations on the Structure and Functions of the Nervous System," (see Abstract in Med. Gazette, vol. xiv. p. 842.) The junction of fibres in central loops, first described by Valentin, has been confirmed by Carns, (Einige Aphorismen ans der Phys. des Nervenlebens, Müll. Arch. 1839,) and by Klencke, (Ueber die Primitivuervenfasern, Gött. 1841,) but by no other anatomist. Valentin himself has lately spoken very doubtfully of it, (Repertorium, 1840, p. 96.)

[2] The microscope does not confirm the opinion of E. H. Weber, Bellingeri, and Grainger, that some fibres pass straightway to the central substance of the cord; nor that, which Valentin's experiments seem to prove, namely, that some of the fibres of the anterior roots which are sent to extensor muscles, go at once to the posterior columns, and some of those of the posterior roots to the anterior columns; but the positive results of experiments are in these questions much better evidence than the negative ones of microscopic examination.

[3] The greater part of this account is from Valentin's works.

interchange of filaments passing from one sheath to another, the whole of the globules are held together in one group, and lie, as it were, imbedded in the meshes of a network formed by their investments.

The ganglion-globules, which seem sometimes to lie free in their sheaths, so that they may be extracted from them, consist mainly of a red or reddish-gray granular material, held together by a clear soft gelatinous substance; and from this, the ganglia and the gray parts of the brain and spinal cord chiefly derive their characteristic colour. The true original form is probably spherical, but in different situations, either to adapt themselves to the surrounding parts, or according to some law of development, they are elongated to an oval or ovate form, or are heart-shaped, or kidney-shaped, or angular, or altogether irregular. In general, each globule has but one nucleus with one nucleolus in its wall; but numerous exceptions to this also are found, which, as well as the varied forms of the globules, seem connected with their progress in development, and with their particular offices in each part.[1]

D. *General arrangement of the two substances in the nervous centres.* The plan of arrangement of the fibres in the brain and spinal cord is already described. The gray substance in the cortical and other parts of the brain, is composed almost entirely of ganglion-globules, which deviate from the general character only in being peculiarly soft, and invested with extremely delicate sheaths. They are collected in small groups in the interstices of the fine vascular network by which the gray matter is everywhere traversed; and the layers, ganglia, and all other forms of gray substance, are due to the different modes in which they are aggregated. On the surface of the cortical substance of the brain, however, another kind of structure is present, and it is found in smaller quantity about other parts of the gray matter: this is a finely granular substance, containing pellucid spherical or oval vesicles, with one or two dark granules in them. In a rather deeper layer, these vesicles, instead of being irregularly scattered through the granular substance, seem each to have appropriated to itself a portion of the latter for an independent covering; and from this condition there seems to be a regular gradation till, in the yet deeper layers of the cortical substance, the vesicles, with their granular coverings, are replaced by perfect ganglion-globules with their filamentous sheaths.[2]

In the purely gray substance of the axis of the spinal cord, the ganglion-globules are arranged in the same manner as in the brain. They are continued even below the giving off of the last spinal nerves in a fine cord-like process, which occupies the termination of the canal of the dura mater.[3]

The ganglia, from whatever part of the nervous system they are taken, present one general plan of structure: their chief mass is composed of a congeries of the ganglion-globules, with which nervous fibres are brought into relation and mingled in various ways. Each ganglionic mass is enveloped by a covering of cellular tissue, continuous with and analogous to, the neurilemma of the nervous cords that enter into it. The strength of this covering is directly proportionate to that of the sheaths of the globules contained within it; and prolongations from the one are closely interwoven with the filaments of the others.

The nervous fibres that enter into the composition of the ganglia, are similar in structure to those of the sensitive and motor nerves, except that they are finer and their sheaths more delicate. A portion of the fibres which enter one side of a ganglion, separate as soon as they have penetrated its substance, and, after forming a plexus in its interior, unite again into one or more cords, and emerge from the other side in the same manner as they entered.

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[1] On all these see Valentin, Henle, and Klencke, in the works already quoted.

[2] See Henle, (Allg. Anat. p. 677,) and Valentin.

[3] Remak, Burdach, Arnold, &c.

But another portion do not pass thus simply: separating from the plexus in individual fibres, or in fasciculi containing each a very few fibres, they wind about in the interior, and usually near the surface of the ganglion, in the most varied manners. In most cases the plexus of fasciculi occupies the central parts of the ganglion, and the fibres and bundles which compose it may be named the *traversing fibres;* the others are, as it were, *spun* round the central parts, and may be called *winding fibres.*[1]

The interspaces between the fibres of both kinds are occupied by the ganglion-globules which lie variously entwined by small vessels and nervous fibres. The exact manner of their distribution varies in different ganglia; in some the globules are chiefly arranged around the traversing fibres in the centre of the mass; in others, they are evenly dispersed throughout, or are absent only at the very exterior; in others, they are almost all placed at one side. But, however, the component parts are arranged, the general plan of construction is in all ganglia the same.

Valentin believes that the winding fibres are those which are about to be distributed in the organs to which they are destined, and that the traversing plexus-forming fibres are those which are as yet far from their destination, and which have to pass through other ganglia, in which they also will at last be arranged as winding fibres. There is no appearance of fibres generated within the ganglia; none leave them but such as are continued from those which entered them.[2] Whether they be connected with any fibres of a peculiar structure is already considered: it is only necessary to add, that some of the nerves proceeding from ganglia, and having a gray or reddish-gray colour very plainly marked, contain ganglion-globules mixed with their fibres. This is the case in the connecting cords of the human cervical ganglia of the sympathetic, into all of which ganglion-globules extend from the ganglia themselves;[3] such nerves might indeed be truly called ganglia, for they scarcely differ, except in form, from the bodies usually so named.—*British Med. and Foreign Review*, July 1842.

[We have to apologise to our respected cotemporary, for the freedom with which we have reprinted so large a portion of Mr Paget's admirable report in the present and August numbers of this Journal. Much, however, that is valuable still remains. We are glad to understand that Mr P.'s work is to appear in a separate form.]

Septum in the Vagina. By J. R. Hancorn, M.R.C.S., Shoreditch.

Mrs —— was taken in labour with her first child. On examination, I found a fleshy band running from the clitoris to the posterior part of the vagina, about an inch in width, which divided the vagina into two. It is needless to say that I divided it close to the clitoris, without any inconvenience arising, and purpose removing it on some future occasion.—*Lancet*, Sept. 3, 1842.

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[1] Valentin, (Uber den Verlauf, &c.;) Remak, (Froriep's N. Notizen, Aug. 1837.) Nearly all this account of the gray substance is taken from the writings of the former.

[2] De functionibus nervorum, p. 66.

[3] Valentin, (Ueber den Verlauf. tab. vi.) See also, in a similar case in the glossopharyngeal nerve, Volmann, (Ueber die motorische Wirkungen, &c. Müll. Archiv. 1840, p. 488.

PRACTICE OF PHYSIC AND PATHOLOGY.

ILLUSTRATIONS OF INFANTILE PATHOLOGY—*Measles.* By JAMES FOULIS DUNCAN, A.M., M.B., Fellow of the King and Queen's College of Physicians, Member of the Royal Medical Society, Edinburgh, and Physician to the North Dublin Workhouse.

In laying before the profession another paper illustrative of infantile pathology, I feel that no apology is necessary for an attempt to turn the opportunities I enjoy to some account, by putting upon record such cases as appear to possess any peculiar importance in this interesting branch of study.

It is naturally to be expected that, in the class of persons who form the inmates of a Workhouse, diseases should present some features peculiar to themselves; at all events, such an opinion will be justified by a perusal of the cases in the following paper; and although, from this circumstance alone, the subject proposed would not be without interest, yet, I conceive that, independently of this consideration, the general subject of measles, as it occurs in the special period of infancy, is well worth the attentive study of the profession, inasmuch as in some works the modifying circumstances which arise from early age in this disease are not noticed at all, and in none of them that I have consulted, is that importance attached to them that they deserve. From what I have seen, I am disposed to think, that even the most healthy form of the disease is not unattended with danger in very early infancy, and that the practitioner in attendance ought consequently to pay the most scrupulous attention to the development of those complications from which the greatest danger is to be apprehended. In infancy, even in strong and vigorous children, there are two sources from which this is likely to arise; the one depending on the state of high vascular action which is habitual and natural to the brain until the process of dentition is completed; the other on the narrowness of the larnyx, which exposes the infant at all times to the danger of sudden death, from even a slight impediment to this delicate organ. The first may prove suddenly fatal by giving rise to convulsions, the last may develop croup, by the tendency of inflammation in the mucous membrane to assume the plastic form at this particular epoch of life; and, as this membrane of the larynx seldom escapes some degree of inflammation in an attack of measles, we are prepared to expect that croup should be not an infrequent complication in the disease.

Before, however, proceeding to make any general remarks upon the epidemic, as it appeared in the Workhouse, or to detail any cases, I think it right to give a tabular view of them entire to the present time, premising this observation, that *every case without exception* that occurred there under my care, is included in the list, and the history continued, not merely to the close of the disease, but to the last period of their remaining under my observation. Hence, some cases are marked as having terminated fatally, although they had completely recovered from the attack of measles, because they subsequently became the victims of another complaint. But in workhouse practice there is this difference from what is usual in ordinary hospitals, that as the patients never leave the care of the physician when they cease to be under treatment, because they are merely transferred to another department of the same institution, he is obliged to meet casualties that otherwise would not come under his notice. But I rejoice to be able to state, that of the survivors, forty-one in number, of all ages, there is not one in a delicate condition after the disease, or concerning whom, I think, there is the least probability of any disagreeable relapse; and on comparing the convalescence of the survivors of the present epidemic with that of those of the last year, I can safely say that the condition of the former is the most satisfactory.

1	John Farnam, . .	1½	March 11,	March 14,	Died.	Double pneumonia, . . .	*P.M.* Mesenteric glands scrofulous.
2	Jane Conolly, . .	19 mos.	„ 14,	„ 22,	Id.	Exten. Bronchitis; convul.,	No *P.M.* Child previously delicate.
3	John Brady, . .	11 mos.	„ 23,	April 12,	Recovered.	. . . . .	Fœtid dis. from ear during convalescence.
4	Mary Bateman, .	10 mos.	„ 23,	„ 6,	Died.	Convulsions, ...	Very delicate previously. No *P.M.*
5	Mary Byrne, . .	2	„ 25,	„ 7,	Id.	Croup; pneumonia, . . .	See case.
6	Mary Hanlon, . .	5 mos.	„ 25,	May 7,	Recovered.	. . . . .	Very delicate previously.
7	Pat. M'Cormick, .	12 mos.	„ 27,	March 28,	Died.	Convulsions, ...	See Case.
8	Pat. Caffray, . .	3	„ 28,	. . . .	Recovered.	. . . . .	Had Scarlatina shortly before.
9	Mary Clarke, . .	4	„ 30,	. . . .	Id.	. . . . .	Id. Right eye remained sore for some time.
10	James Maher, . .	13 mos.	April 5,	May 19,	Died.	Pneumonia; convulsions, .	Degenerated into phthisis. No *P.M.*
11	James Kenny, . .	7 mos.	„ 6,	April 11,	Id.	Convulsions, ...	Delicate previously.
12	James Solan, . .	20 mos.	„ 8,	June 17,	Died.	Croup, ...	Degenerated into phthisis.
13	Michael Dillon, . .	8 mos.	„ 8,	April 12,	Id.	Pneumonia; convulsions, .	Very delicate before. *P.M.* Effusion into both ventricles; crude tubercles in lungs; mesenteric glands scrofulous.
14	Andrew Green, . .	4 mos.	„ 8,	„ 12,	Id.	Convulsions; peritonitis, .	*P.M.* Effusion into both ventricles; lungs healthy; mesenteric glands scrofulous.
15	Catherine Langan, .	15 mos.	„ 9,	„ 11,	Id.	Convulsions, ...	*P.M.* Brain highly congested; no effusion; mesenteric glands scrofulous.
16	Patrick Spain, . .	18 mos.	„ 10,	„ 12,	Id.	Convulsions, ...	Had hooping-cough previously. *P.M.* Effusion into both vent.; lungs healthy.
17	Patrick Little, . .	12 mos.	„ 14,	May 1,	Recovered.	Bronchitis, ...	Had hooping-cough previously.
18	John Foley, . . .	9 mos.	„ 22,	„ 20,	Id.		
19	Patrick Walsh, . .	10 mos.	„ 26,	„ 23,	Died.	Convulsions, ...	Very delicate before. Recovered from measles, and relapsed two or three days before death.
20	John M'Cormick, .	3	May 11,	„ 31,	Recovered.	Pneumonia, ...	Prolapsus ani succeeded.
21	Michael Leonard, .	4	„ 12,	„ 31,	Recovered.	Pneumonia, ...	V. S. performed.
22	John Small, . . .	5	„ 12,	„ 31,	Id.	Croupy cough; head symp.,	Id. Delicate previously.
23	Ann Synnott, . .	7	„ 13,	„ 31,	Id.	Bronchitis, ...	
24	John Townsend, .	6 mos.	„ 13,	„ 16,	Died.	Pneumonia; convulsions, .	Eruption receded before he was seen never reappeared.
25	Mary A. Bradshaw,	4	„ 15,	„ 31,	Recovered.		
26	James Whelan, . .	3	„ 16,	„ 31,	Recovered.	Croup; convulsions, . . .	See Case.

TABLE I.—*continued.*

No.	Name.	Age.	Date of Attack.	Date of Termination.	Result.	Complications.	Remarks.
27	John Miller, . . .	3	May 16,	June 8,	Recovered.	. . . . .	Took remittent fever subsequently.
28	Thomas Fox, . .	3	„ 18,	May 31,	Id.		
29	Susan Fleming, . .	8 mos.	„ 20,	June 16,	Id.	Ulcerated tonsils with a rash-like scarlatina on second day, succeeded by measles on third ditto.	
30	Thomas Rollins, .	3	„ 24,	„ 5,	Id.	Pneumonia.	
31	Eliza Meally, . .	4	„ 25,	„ 9,	Died.	Bronchitis, ...	*P.M.* Crude tubercle in lungs; prolap. ani.
32	James Hayes, . .	3	„ 25,	„ 4,	Recovered.		
33	Mary A. Williams,	9	„ 24,	„ 11,	Id.	Pneumonia; croupy cough,	See Case.
34	Ellen Nicholson, .	4	„ 25,	May 31,	Id.	. . . . .	Ophthalmia succeeded.
35	Eliza Nicholson, .	7	„ 25,	June 17,	Id.	. . . . .	Erup. very dark; succeeded by rem. fever.
36	Ann Redmond, . .	11	„ 29,	„ 4,	Id.	. . . . .	Eruption very dark; ophthalmia.
37	John Martin, . .	5	„ 27,	„ 13,	Id.	Bronchitis.	
38	Bridget Donohoe, .	4	„ 28,	„ 8,	Id.		
39	Mary A. Kiernan, .	6	„ 28,	„ 8,	Id.		
40	James Lacey, . .	6	June 5,	„ 13,	Id.		
41	Joseph M'Kiernan,	28 mos.	„ 8,	„ 20,	Id.	Ulcerated tonsils; convulsions, &c.	See Case.
42	Joseph Thomas, .	8	„ 8,	„ 16,	Id.		
43	John Lacey, . . .	2½	„ 10,	„ 27,	Id.	Pneumonia, ...	Ophthalmia.
44	John Fitzpatrick, .	3	„ 12,	„ 20,	Id.	. . . . .	Prolapsus ani succeeded.
45	Margaret Keams, .	4	„ 12,	„ 20,	Id.	. . . . .	Ophthalmia.
46	Letitia Foly, . .	9	„ 11,	„ 16,	Id.		
47	Ann Nolan, . . .	12 mos.	„ 16,	„ 25,	Id.	Ulcerated tonsils.	
48	James M'Coy, . .	4	„ 19,	„ 25,	Id.	Bronchitis.	
49	William Freeman,	6	„ 19,	„ 25,	Id.		
50	James Martin, . .	8	„ 20,	„ 25,	Id.		
51	Fitzgibbon O'Connor,	13	„ 20,	„ 25,	Id.		
52	John Daly, . . .	9	„ 20,	„ 2,	Id.		
53	Patrick Robins, . .	6	„ 21,	„ 25,	Id.		
54	George Robins, . .	13	„ 21,	„ 27,	Id.	Bronchitis.	
55	William Reilly, . .	4	„ 22,	„ 30,	Id.	Pneumonia.	
56	John Fullam, . .	9	„ 23,	„ 25,	Id.		

TABLE II.

Ages.	Males.			Females.			Total recovered.	Total Deaths.
	Recovered.	Died.	Total.	Recovered.	Died.	Total.		
Under 1 Year,	2	5	7	3	1	4	5	6
1—2,	2	5	7	0	3	3	2	8
2—5,	15	0	15	6	1	7	21	1
Above 5,	9	0	9	4	0	4	11	0
Total,.....	28	10	38	13	5	18	39	15

TABLE III.

Complications.	Males.	Females.	Total.
Pneumonia,.....	9	3	12
Convulsions,.....	10	3	13
Bronchitis,.....	5	3	8
Phthisis,.....	3	1	4
Croup,.....	3	2	5
Peritonitis,.....	1	0	1
Ulcerated tonsils,.....	1	2	3
Prolapsus ani succeeded,.....	2	2	4
Ophthalmia, ditto,.....	1	4	5

Constitution of the Epidemic.—The severity of the disease at the commencement was much greater than at the close of the period included in the above returns, as will be at once apparent by a glance at the general table; indeed, in most of the concluding cases very little treatment at all was necessary. This may have partly been owing to the severe weather and piercing winds which prevailed at the first, but which gradually subsided as summer advanced. The rash, in many cases, appeared at an unusually early period, but did not develop itself fully, and was easily repelled, and this circumstance uniformly indicated great danger, and concurred with the manifestation of some new feature. In some of these we succeeded in restoring it to the surface, but in others it never reappeared. The colour of the eruption was often dark from the beginning, becoming more so on the second or third day, till it became a deep purple, the marks of which did not disappear for several days after the decline of the disease.

Complications.—Of these the most numerous were convulsions, amounting to thirteen in all, a circumstance in itself indicating the unhealthy state of constitution that prevailed among the children. Three of these occurred at the commencement of the attack, and were the first symptoms that attracted attention; in others they succeeded on the decline of the eruption, but in the majority of instances they appeared during the height of the disorder.[1] Next, in point of frequency, was pneumonia, which assumed a very severe form, and required decided treatment to arrest its progress. Under the head bronchitis, I have set down only those cases where the symptoms were well marked, and in which there was sufficient to justify anxiety on the part of the medical attendant. Some of these were in great danger from the

[1] It is a remarkable fact that in the South Union Workhouse, as I have been informed by Dr Lees, there have been only three or four cases of convulsions altogether; whereas, in the North Union, indepedently of those mentioned in this paper, there have been a great number.

quantity of secretion poured into the air tubes. It may, however, be remarked that, contrary to the general impression, bronchitis is less frequent in the measles of early infancy than pneumonia, although the mucous membrane might be expected *à priori* to be more generally inflamed than the tissue of the lungs themselves. Five cases are marked as croup; but three only were of sufficient severity to be set down as decidedly so, although in none of them, probably from the active measures adopted at the very outset, was there a false membrane regularly formed. But this does not appear to be a good reason for withholding from them this name, because there is no reason why the disease may not be arrested before as well as after this formation; and if so, the disease is as much croup then, although it never should reach that stage, as if it should be allowed to run its course without interruption. The treatment adopted in each of these cases was successful so far as the symptoms of croup were concerned. Only four cases are set down as phthisis, in which number are included not only those which actually died from disorganization of the lungs, but which, from the circumstances of crude tubercles being found in them on post-mortem examination, would have ultimately degenerated into consumption. The circumstance, however, of only four children out of fifty-six dying from consumption is worthy of remark, and shows that the opinion is totally unfounded, that measles has a peculiar tendency to develop the disease, especially, as of these four two at least laboured under it before they were attacked with measles. Three cases presented well marked inflammation of the fauces and ulcers on the tonsils; in one accompanied by an eruption resembling scarlatina, but which gave way on the third day to a regular eruption of measles. The throat affection was treated by lunar caustic both in the solid form and in solution, and did well. I have not read in any work an account of a complication similar to this in measles.[1] Prolapsus ani succeeded towards the close in four instances; in one the patient died from phthisis; in the others it was cured by alterative doses of hyd. c. cretâ, and Dover's powder, and the muriated tinct. of iron given in injection with gruel, a remedy that answers remarkably well when this state depends on local atony, and not on any organic disease of the bowel itself. Five cases were followed by a scrofulous ophthalmia, which, however, yielded readily to the ordinary treatment.

Mortality.—The total number of deaths amounted to fifteen, but of these it is right to state that seven were in such a state, previous to the attack, that I think there can be doubt but that they would have died, even if they had never suffered from the epidemic. In two of these the probable duration of life was not shortened I should say by the disease, while in the remaining five it certainly was. The immediate cause of death was pneumonia in two instances, phthisis in three, and convulsions in ten.

Treatment.—In the great majority of cases, particularly towards the close of the period when the disease became mild, little was done except the administration of gentle diaphoretics in suitable doses. Nitre in combination with Mindererus' spirit, I generally preferred. When there was much cough with any degree of hardness in it, even though there was no bronchitis or pneumonia, a small quantity of liquor antimonialis was added to the mixture. In severe cases, most of which will be found detailed at length, the treatment was more decided, consisting of tartar emetic in larger doses shielded by a drop or two of laudanum to the ounce mixture, with some aromatic water. A combination which not only prevented the stomach and bowels being affected unpleasantly by the remedy, but which determined more energetically to the surface. Calomel and hippo were also given freely when circumstances required their use, but in larger doses and at shorter intervals than I think is generally practised, a mode of administering them from

[1] The inflammation of the fauces and tonsils, however, is mentioned in the Dict. des Sciences Médicales.

which the happiest effects were produced. But the principal peculiarity I think to be noticed in the treatment, was the cautious use of wine diluted with water and sweetened; this was given even when there seemed to be a good deal of inflammation present in the lungs, but of an atonic character; when the infant's strength was worn down by the violence of the disease and the indisposition to take nourishment. It was also tried in cases which had suffered from convulsions, or seemed likely to be so attacked from their pale, sickly aspect, large head, and ill-proportioned limbs, and agreed very well with them. Whenever it was found to answer, the quantity was slowly increased, in proportion to the child's age. In speaking of the use of wine in the present instance, I do not wish it to be supposed that I am an advocate for its adoption when the children are strong and healthy, and able to resist the attack of illness, but the constitutions I have had to deal with were so broken down, in many cases long before their admission to the workhouse, that I found myself compelled to resort to stimulants that would otherwise have been unnecessary, and I was gratified to find such beneficial results produced by so simple a remedy.

Case I.—*Measles complicated with Convulsions, simulating Bronchitis.*—On the morning of the 26th March, I was sent for, at six o'clock A.M., to see Patrick M'Cormick, a fine stout infant, twelve months old, who was taken very unwell. He had been some days in hospital for an attack of hooping cough, where he was under treatment; but the symptoms were so mild as not to require any decided measures. He had been otherwise in perfect health the preceding day, and had slept well till two o'clock in the night, when he became suddenly, and without any obvious cause, oppressed in his breathing, which was short, laboured, and accompanied with a loud mucous wheezing. He did not exhibit any symptoms of convulsions, except that occasionally the dyspnœa became more severe, and he worked with his tongue, protruding and retracting it repeatedly, during which periods it assumed a deep livid colour. Mr Brown, the apothecary, had put him into a warm bath, and administered several strong emetics previous to my arrival; but none of these had taken any effect. To a casual observer, the case, at this time, presented all the symptoms of an intense bronchitis, accompanied with a copious secretion into the bronchial tubes; and the most effective remedies would have seemed to be those, which, by removing the secretion, would have enabled the lungs to discharge their functions; but I was more disposed, from knowing the previous history of the case, to consider the symptoms dependent on the state of the brain, and, accordingly, as the emetic plan had failed, I ordered a turpentine injection to be administered immediately, and calomel in large doses (two grains each) to be given every hour. 11 *o'clock* A.M. Passed a great deal from the bowels since morning; discharges of a light yellowish-green colour; breathing easier; wheezing much less; eyes and lips congested; an obscure rash, which the nurse stated to be measles, has appeared and receded since last visit; takes the breast freely. On consultation with my colleague, Dr Kirkpatrick, we determined to take 4 oz. of blood from the arm, and to add some ipecacuanha to the calomel; and as he was suffering from painful dentition, the gums were freely divided. V. S. ad ℥ iv. R. Calom. gr. ij. Ipecac. gr. ½ 2dis horis.

1 *o'clock* P.M. Was greatly relieved by the bleeding. The dyspnœa and wheezing almost immediately and entirely disappeared. 5 *o'clock.* The nurse states that he has had an attack of convulsions since last visit. The pupils are contracted, and the eyes convulsively turned upwards under the lids. On being roused from the state of stupor there is evident strabismus; constant convulsive movements of the lips, and of the hands to the mouth; respiration very short and quick; eyes congested; rash, though faint, is perceptible. B. T. statim. Sinap. pedibus sing. Vesic. nuchæ. Cont. pulveres.

8 *o'clock* P.M. Bowels a good deal acted on; seems more lively; respiration less oppressed; mustard poultices smarted him in about ten minutes; still very restless, tossing his hands and arms about; abdomen swelled and somewhat hard. Enema fœtid. c. Sp. Tereb. Cont. pulveres 2 his horis.

March 27th. Did not sleep till towards morning; bowels well moved till four o'clock, when they became quiet; took the breast freely, and drank a good deal; is at present asleep; respiration short; pulse weak, but not so quick as last night; skin cool, covered with a dusky eruption of measles; rolls his head from side to side very much. Warm bath with cold to the head. Wine and water. Mixture containing Carbon. Ammon.

3 *o'clock.* No reaction has taken place; respiration still short; occasional snapping of the hands. During the course of the night he was frequently convulsed, until death terminated his sufferings at 2 o'clock A.M.

Remarks.—Owing to particular circumstances no examination of the body took place; yet I consider the case sufficiently interesting, notwithstanding this defect, to be laid before the public. No one can for a moment hesitate to attribute the fatal termination to the affection of the head, although the symptoms simulated so exactly those of suffocative catarrh. There was, on the one hand, the laboured breathing, the trachæal rattle, the livid lips, that indicate this affection; and on the other, there was the absence of any marked convulsion, or other symptom of cerebral disease. Yet the history of the case, as well as the results of treatment, evidently proved that the latter was the real cause of all the phenomena. The child had been perfectly free from any serious affection of the chest, and in the middle of the night was attacked suddenly, and without obvious cause, with these symptoms, in a degree of intensity never witnessed at the commencement of an ordinary attack of bronchitis. The emetics, too, which Mr Brown had administered previous to my arrival, were of the strongest description, but had failed to produce their usual effects. This form of convulsion is not rare, and deserves consideration, from the liability of a practitioner being led to mistake it for what it so much resembles, and so to overlook the more important disease that is insidiously advancing in the brain. The following case illustrates very forcibly its deceptive nature, and the danger that invariably attends it. One day, when accompanying the Board of Guardians round the house, during a visit of inspection, I was hastily summoned to the nursery to see an infant, named Mac Namara, ten months old, supposed to be choking in consequence of having swallowed something that had stuck in her throat. On my arrival I found every symptom present that might be expected under such circumstances. The child was gasping at irregular intervals; the lips were livid, and death seemed close at hand. I instantly passed a gum elastic catheter down the œsophagus to the stomach, but found no obstruction to its progress; an injection containing turpentine was thrown up, and the child placed in a warm bath, when the symptoms slowly disappeared. The next morning the child was perfectly well, had slept soundly, and had no return of the convulsion. I wished, however, to examine the state of the lungs, and desired the mother to strip the chest for this purpose, and in the very act of doing so, the former symptoms returned in all their violence; and although every remedy that could be thought of on the moment was adopted, the child died upon the spot. On examination after death there was found effusion into both ventricles, but no disease of the pulmonary organs. Cases somewhat similar to these have been described by Sir Henry Marsh in the fifth volume of the Dublin Hospital Reports, under the name of spasm of the glottis, and I have no hesitation in believing that they are the same disease, only a little modified. They occurred in the same class of persons, and under very similar circumstances, and commenced suddenly at night. In one respect, however, there seems to be a striking difference in the symptoms; for he describes the paroxysm as attended with a laryngeal sound, and as terminating in a long drawn whoop,

or crow, or inspiration. But in the cases I have observed there was nothing analogous to this; there was merely the trachæal wheeze, common in ordinary bronchitis, but in an aggravated degree, resembling that audible on the approach of death in adults. In reference to the treatment of this affection, Sir H. Marsh particularly insists upon the change of the nurse and removal to the country, as the most important steps to be attended to; and he mentions, that he has known the disease to return again and again, after it had entirely disappeared, on the infant being merely brought back to reside in the city, and as often to be perfectly removed by restoring it to a pure atmosphere. But while I freely admit the paramount importance of securing good air for the little sufferers, by an immediate removal to the country, I consider that a great deal is also due to deficient nourishment, bad food, and the unhealthy milk of the mother. Accordingly I have found in such cases the greatest advantages follow from the administration of tonics to the mother, such as quinine, or the infusion of bark in combination with a small proportion of tartaric acid, coupled with a moderate quantity of porter and wholesome nourishing food.

Case II.—*Measles; Convulsions; Effusion into Ventricles.*—Patrick Spain, aged 18 months, had been some time ill with hooping-cough, in the commencement of which he had suffered from a severe attack of pneumonia, but from which he had recovered several weeks. He was quite well on the 9th of April, except that the right eye had been somewhat inflamed for a day or two previously. On that evening he was very hot and restless, and an eruption of measles appeared on the 10th inst. Emetic of Hippo Wine. Mist. Nitri coch. med. subinde.

7 *o'clock* P.M. No effect from the emetic, though frequently repeated; rash has disappeared. B. T. statim. Ipecac. gr. vi. statim. Cont. Mist.

April 11th. No vomiting; great purging; eruption a little more out; coughs a great deal; great thirst. 7 *o'clock* P.M. No vomiting; great purging. P. Dov. gr. ij. B. T. h. s.

April 12th. Diarrhœa checked; no regular convulsion, but the breathing has been laboured all night, and accompanied with a loud trachæal rattle. Died in the course of the day.

Post Mortem.—Brain not very vascular; considerable effusion into both ventricles. Lungs *healthy;* a few small spots, solidified, but not vascular or congested, which seemed to be the remains of a previous pneumonia. Mesenteric glands enlarged, but healthy.

Case III.—*Measles; Convulsions; no Effusion into Ventricles.*—Catherine Langan, aged fifteen months, an infant previously healthy; after two days' illness was covered with measles on the morning of the 9th of April; some cough. Emetic Hippo Wine. R. Ant. Tartar. gr. i. M. Mucilag. ℥ iv. Sumat coch. min. frequenter.

April 10th. Breathing oppressed; slight hoarseness; eruption remained out only for about an hour; has not since returned; throws up with emetic mixture; a good deal purged; dejections green. B. T. statim. R. Calom. gr. i. Ipecac. gr. ½. M. 2dis h. Vesic. sterno.

7 *o'clock,* P.M.—Considerable wheezing in chest, which was somewhat relieved by bath; breathing is still short and laboured; no distinct convulsion; purging; no expectoration from medicine. Hirud. ij. temporibus; Enema tereb. statim; Cont. pulveres.

April 11th.—Took strong convulsions last night at eleven o'clock, which lasted until two o'clock, when she died.

Post Mortem.—Brain very vascular throughout; no effusion of any amount into ventricles. Lungs congested but not pneumonic, except in one small spot of the left lung. Mesenteric glands were generally enlarged; a few were in the first stage of scrofulous degeneration.

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Case IV.—*Measles; Croup; Double Pneumonia.*—Mary Byrne, ætat 2, a fine robust child, had the rash of measles out for three days, and was doing well till the evening of the 26th March, when at 8 o'clock P.M., on my visit to the Workhouse, I found her breathing had assumed a distinctly croupy character; she had previously had a slight cough, but no dulness or percussion, nor *râle* in the respiration; she was ordered immediately, V. S. ad ℥iv.; R. Antim. Tartar, gr. ii.; M. Mucilag. ℥iv.; Sumat. coch. med. frequenter; Calom. gr. ii. tertiis horis. The bleeding was attended with instant relief; in the course of a few minutes the croupy sound had entirely disappeared.

March 27th. Had slept well; was not much sickened by the mixture; the bowels were moved five or six times; no remains of the croupy sound in respiration this morning, not even when she coughs; not so much oppressed in her breathing as last night, but she coughs a good deal; no dulness on percussion, but there are loud bronchitic *râles* through the chest.

March 28th. Had a slight return of the croupy respiration last night, which did not continue; slept well; some jelly-like discharges from the bowels; rash fading; medicine does not vomit her. Ol. Ricini, ℥i.

March 29th. Slept a good deal last night; a little hoarse; not much cough; bowels regular; no dulness; bronchitic *râles* through chest. M. Polygalæ c. Ammon. Carbon; Calom. gr. ½; Ipecac. gr. ¼. M. tertiis horis.

March 30th. Was very weak and low yesterday evening; got one ounce of wine in water, from which she derived much advantage. Vini ℥i.; Cont. cætera.

March 31st. Has cut several teeth; croupy respiration and cough are more marked to-day; when the child is quiet this sound disappears almost entirely, but becomes more manifest whenever it is excited by any person disturbing it; some dulness over right scapula; expectoration very thick and viscid, and can only be removed from the mouth by the nurse introducing her finger for the purpose. Vesic. sterno; Calom; ipecac, ää gr. ½ M. tertiis horis.

April 1st. Was very ill last night with wheezing and oppression of breathing, which was relieved with difficulty by the tartar emetic solution; loud croupy sound of respiration this morning. Cont.

April 3d. Was very bad yesterday with croupy respiration; the tartar emetic solution did not make her vomit, but the nurse secretly, and without directions, puffed some tobacco smoke into her mouth, which immediately had the effect of making her throw up two very thick, cord-like pieces of mucus; expectoration came up freely afterwards from the use of the mixture. To-day has been very much purged; dejections watery; throws up freely; no croupy respiration. Vini ℥i.; M. Cretæ C.

April 5th. In a very precarious state; breathing short and laboured; very pale; blister has assumed a dark unhealthy aspect, which has been washed with lotio nigra, and a poultice applied; breathing slightly stridulous; no cough except after drinking. Vini ℥ii.

April 6th. Respiration rather short; blistered surface very much inflamed and unhealthy; spots like pemphigus gangrenosus appearing over the body: bowels very free; dejections dark and watery. In about an hour after the visit the child gradually sunk.

Post-Mortem.—Subcutaneous layer of fat, very thick; thymous gland appeared much larger than usual in an infant of this age, and was infiltrated, as well as the cellular membrane in its immediate vicinity with serum. The lungs were partially affected with pneumonia in different stages of its progress. One whole lobe was in that of purulent infiltration, and others in the stage of solidification. The larynx exhibited traces of inflammation, and the mucous membrane on the rima was inflamed, and in one spot on the very edge there was a small ulcer. The trachea the whole way down to its subdivisions was very vascular, thickened, and red. The chest only was examined.

Remarks.—This case is worthy of attention because of the peculiar condition of the thymous gland, discovered after death, combined with the occasional croupy sound of respiration produced whenever the child cried or was annoyed by any thing. This symptom was first pointed out to me by Dr Doherty, who frequently gives me the benefit of his presence in my daily visits, and who thought it corresponded with the descriptions recently published of thymic asthma. The gland was certainly much larger than I have ever seen it at this age, and from its supposed erectile properties would be quite capable of producing the symptom. But although Dr Doherty thought he perceived, during life, a swelling at the anterior part of the neck corresponding to the situation and time of this erethism, I was not able to satisfy myself that this latter phenomenon took place, at least to any sensible extent.

The frequency and fatality of pneumonia in childhood, as contrasted with advanced life, form a very interesting subject of consideration, and one to which I may, perhaps, on some future occasion, revert. At present I am not able to do more than point attention to the fact, and to state that the following results, extracted from the second Report of the Registrar-General of Births, Deaths, and Marriages, throw an important light on the subject. The deaths of the metropolitan district are divided into three classes, besides being arranged under the head of each disease, viz. those under 15 years of age, between 15 and 60, and above 60. In one table there is given a return for each of the five weeks ending Saturday, January 11, 1840, January 18, January 25, February 1, February 8. Under the head of pneumonia the total of these weeks for each period is as follows:

Under 15, . . .	257
15 to 60, ...	73
Above 60, ...	30

This remarkable difference would be still more instructive if the distinctions of age were made more minute, and we were enabled to separate from the rest the proportion occurring during infancy. How far this is owing to a less energetic mode of treatment it is not easy to say, but I am at present strongly inclined to believe that a false tenderness in treating the disorders of infancy mildly is, perhaps, partly at least, the cause of this result, and that when practitioners adopt a more decided tone in their efforts we shall see a great improvement in this respect. And what satisfies me that there is some truth in this opinion is the fact, that pneumonia, when it proves fatal in infancy, very rarely is found to have advanced beyond the stage of hepatization, whereas the reverse of this is what is generally observed in adults. The case before us is one of those rare instances in which the lungs are found to have advanced to the stage of purulent infiltration in infancy, and this circumstance, coupled with the high degree of inflammation about the larynx, proves that no other termination could have been expected, while the remarkable relief experienced at the commencement from the use of the lancet shows how important this remedy is in cases of unusual danger.

Case V.—*Measles; Croup; Recovery.* James Solan, aged 20 months, had been always a delicate child since admission some months ago, during which time he has suffered from dentition and hooping cough which he had severely. He has been a good deal wasted and weakened by his complaints. For the last two days has been sick and feverish, but this was attributed to teething. Was bathed last night; eruption appeared in a healthy form this morning, *April* 8. Emetic of Hippo wine; R. Mist. Mucilag, ℥iv; Vini Antimon. ℥ij; Sumat coch. min. frequenter.

April 9th. Is bathed in perspiration, and sleeping soundly; medicine operated both up and down. 8 *o'clock* P.M. This evening the respiration and cough have assumed the character of croup in a well marked form. V. S. ad ℥iv.; Calomel. gr. i.; Ipecac. gr. ½. M 2dis horis.

April 10th. Blood buffed and cupped: got relief from the bleeding, and immediately afterwards lost the croupy sound in his breathing; a good deal purged: no vomiting nor expectoration; cough is much less; eruption manifest, but faded; considerable thirst. Vesic. sterno. Calom. Ipec. āā gr. i. M. 3tiis horis. 7 *o'clock* P.M. Medicine causes vomiting and purging; dejections watery and greenish; is much relieved, but the hoarseness has returned in a slight degree within this hour: is covered with perspiration; blister did not rise in two hours and a half. Vesic. iterum. Repetantur pulveres.

April 11th. Breathing easy; powders make him throw up; not much purged; blisters rose well; coughs only at night; the cough resumes the character of hooping-cough; appetite returns; dejections this morning yellow and consistent. Vini ʒi. Arrowroot and sugar. 7 *o'clock*, P.M. Is quite quiet; appetite good; sleeps well; bowels less purged; dejections natural.

April 12th. Much better this morning.

April 14th. Cut four back teeth last night; continues to improve.

April 15th. Breathing quite easy; cough is again become severe and frequent, and accompanied by a loud kink; some prolapsus ani. R. Tinct. Cinchon. C. ʒiij. Tinct. Camph. C. ʒij. Tinct. Cantharid. ʒi. Sumat. coch. min. subinde.

April 16th. After taking a teaspoonful of the mixture last night became quite sleepy, rolled his eyes in their sockets and moaned a great deal. This morning the same symptoms recurred on getting a second dose; is now free from any appearance of oppression. Omitt. Mistura. Cont. Vinum.

April 28th. The child continues to improve in health and strength; though much exhausted, is now recovering weight and flesh; appetite good; the quantity of wine has been increased to two ounces daily, and he has been allowed a little meat.

Remarks.—This case deserves attention from the suspension of hooping-cough during the eruption, and its return on its disappearance. After continuing to improve for some weeks he began again to decline, and died from consumption on the 17th June.

Case VI.—*Measles; Peritonitis.*—Andrew Green, aged 4 months, was a stout, healthy infant from birth, but had been in hospital about a week previously to the 7th of April for a threatened attack of hydrocephalus, from which he recovered. On the evening of that day he was seized with a fit which had nearly terminated his life. It seemed, from the description I got of it, to have been more of the nature of coma than a regular convulsion, but yielded to the exhibition of a turpentine injection, a warm bath, and repeated doses of calomel. The child did not appear to have been labouring under any previous sickness, but to have been seized suddenly. On the morning of the 8th there was no appearance of convulsion, and an eruption of measles had taken place.

April 9th. Eruption well out on body; some cough; bowels regular. Calom. gr. ½. Ipecac. gr. ¼. 3tiis horis.

April 10th. Is this morning moaning very much; body quite stiff; head very much retracted; eyes turned up; purged a good deal; not much cough. Hir. ij. temporibus. Calom. gr. i. Ipecac. gr. ½. 2dis horis. B. T. 7 *o'clock*, P.M. Relieved after the leeches, and still more after the bath; diarrhœa; dejections watery and greenish. Adhib. Vesicat. occipiti. Curetur. ung. hydrar. postea.

April 11th. No convulsion; eruption more out; a hard flag is perceptible near the umbilicus, with an erysipelatous blush on the surface, and another on the left thigh; not much purged; dejections this morning yellow; is very cross. Contin. 7 *o'clock*, P.M. Head somewhat retracted; fingers and toes clenched; not purged. B. T. statim.

Apil 12th. In short convulsions all night and this morning; died towards evening.

Post Mortem.—No particular appearance on external surface.

Brain not unusually vascular, but the venous sinuses were turgid with black blood; considerable effusion into both ventricles.

Lungs healthy; gall-bladder white and crupty; inferior margin of liver of a dark green colour.

On cutting into the abdomen, several ounces of a greenish-yellow fluid were found in its cavity. The abdominal peritoneum, as well the mesenteric and omental portions, were very vascular. Intestinal tube healthy, mesenteric glands commencing to be affected with scrofula.

Case VII.—*Measles; Intense Bronchitis; Pneumonia; Convulsions; Recovery.*—Mary Anne Williams, an infant 9 months old, was admitted into the Workhouse, May 23, 1842, and into the hospital of the institution, May 24, having been some days ill in measles, the eruption of which was then faded over the body, and obscure. There was a constant suffocative cough, of a harsh croupy character; the chest sounded clearly on percussion; bronchitic râles audible by the stethoscope; diarrhœa; dejections greenish. B. T. statim. R. Ant. Tartariz. gr. ij. Tinct. Opii gtt. iv. Mist. Mucilag. ℥ij. M. Sumat coch. minim. frequenter.

May 25th. Breathing much more oppressed; cough has become incessant, and as if the lungs were completely stuffed up; got the mixture twelve or thirteen times, but has only once vomited. Adhib. Vesic. sterno statim. Sinapism. pedibus. R. Calom. Ipecac. āā gr. i. M. 2dis horis. Mist. polygal. c. ammon. carb. Coch. med. frequenter.

Half past 7 oclock P.M. Child somewhat relieved, but is still greatly affected with the cough as before; had a slight convulsion through the day; no vomiting from powders. Injic. enema tereb. statim. B. T. h. s. Sumat pulveres om. horâ.

May 26th. Greatly relieved; less dyspnœa; scarcely any appearance of suffocation or throat affection; got fourteen powders since the preceding evening, which made her throw up freely; chest sounds clearly on percussion; bronchitic râles through the lungs; took the breast freely; bowels slightly purged; dejections greenish; is cutting front teeth, and the gums are very hot and tender; tongue white; blisters rose well. Gums to be lanced. Ol. Ricini ℥i. Sumat. pulv. 3tiis horis. Cont. Mistura.

May 27th. Cough, though softer, is still troublesome; considerable dyspnœa remains; not so much purged; when excited so as to cry, inspiration becomes croupy, not otherwise; there is some dulness at base of left lung posteriorly, and crepitus can be heard there; bronchitic râles audible in right lung; got eight powders, and threw up after each; cut two teeth since yesterday; takes the breast well. Unguent. oxidi zinci parti ves. Vini ℥i. Cont. cætera.

May 28th. Much better; cough softer; got eight powders, vomited after each; not so much purged; dulness nearly gone; respiration freer; crepitus larger and softer; slept well after the wine; blister is still sore. Vini niss. Cataplasm. sterno. Arrowroot. Cont. cætera.

May 31st. Blister very sore still; slight dyspnœa; no purging; appetite good. R. Calom. Ipecac. āā gr. ½. M. 3tiis horis.

June 6th. Child improving in flesh, strength, and weight; soft mucous râle near base of left lung; respiration otherwise tolerably good.

June 12th. Discharged quite well.

Remarks.—When this case first came under my notice, I felt great apprehensions as to the result; the eruption had been out several days, the child had been exposed to cold and hardship, and the extent of bronchitis in the lung was so great, that I feared it would not have strength of constitution sufficient to endure the remedies necessary for cure. But its sufferings were so much increased, and the danger of suffocation became so imminent on the 25th, especially in the evening, when the nurse reported to me, that in addi-

tion to the other symptoms, an attack of convulsions supervened, that I thought the case almost hopeless, and determined upon the adoption of the very vigorous measures that are detailed, and to which, particularly, I believe, the child's recovery is to be attributed. In such cases mild remedies and minute doses are perfectly useless, and the practitioner has no alternative but to adopt remedies, the strength of which bears a direct ratio to the violence of the symptoms, if he would hope to overcome the disease; and I believe that the recovery in this case would have been more prompt, had I permitted the powders to be continued for some time longer, at the shorter interval of an hour, instead of directing them to be given every third hour, as was the case on the 26th inst.: but I was anxious to act cautiously in the use of such a remedy as calomel with so young a child, and therefore took the first opportunity of diminishing the frequency of the dose when the urgency of the symptoms was somewhat abated. Much benefit, likewise, I attribute to the use of the wine in this case, promoting sleep, increasing appetite, and supporting the strength of the patient, and this too at a time when I felt it necessary to continue the calomel and hippo, to reduce the inflammation of the lungs.

Case VIII.—*Ulceration of the Tonsils; Eruption like Scarlatina; Measles; Recovery.*—Joseph M'Kiernan, a fine healthy infant, but with a rather large head, twenty-eight months old, was seized suddenly on the evening of the 7th June 1842, with obscure convulsions; stupor; quick and spasmodic breathing; hiccough; the eyes were red and congested; the pupils contracted and insensible to light; the bowels were confined, the belly hard and full. He had got two injections and a warm bath before my arrival, but they had not acted on the bowels nor produced any change. I immediately put him into a bath at a temperature of 108° F., and poured cold water on his head, which made him cry, and partially restored sensibility, but not permanently. I then ordered mustard poultices to his feet and legs, a blister to the nape of his neck, and two grains of calomel to be given every hour.

June 8th. No amendment took place till after the blister rose, which was in about three hours; bowels were slightly opened by the medicine; he seems quite conscious this morning, and stretches out his hand good-humouredly when spoken to, but does not distinguish his mother from other persons. Rep. Cal. gr. ii. 2dis horis.

1 *o'clock* P.M. My colleague, Dr Kirkpatrick, on visiting the case at this hour, recognized a faint rash on the surface like scarlatina, and on examining the fauces, we found them red, swelled, and ulcerated; in other respects the child was better; I immediately touched the tonsils with solid nitrate of silver. 10 *o'clock* P.M. Child sleeping quietly; bathed in perspiration; some rash on chest; coughed a good deal; bowels well freed; got six powders since morning. Tonsils touched a second time. R. Antim. Tartar. gr. ii. Nitri ℈ i. Aq. Menth. Pip. ʒ iv. Tinct. Opii gtt. vi. M. Coch. minim. subinde. Omr. pulveres.

9th. No eruption visible; nurse says his skin was very red this morning; is much more lively; eyes of natural brilliancy; has vomited greatly, and been purged during the night; slept at intervals; throat looks better; cough, softer and freer. R. Vini Antim. ʒii. Nitrat. Potas. ℈ i. M. Mucilag. ʒ iv. Tinct. Opii gtt. vi. M. Coch. min. subinde.

10th. Yesterday evening began to sneeze several times, and the eyes became sore and watery; at the same time the rash of measles appeared upon the face; this morning it is out on the body; appetite good; can swallow easily; thirst; not much diarrhœa; coughed a good deal, but the cough is soft; medicine sickened him; is quite lively.

11th. Very lively to-day; skin cool; measles distinctly out, but thinly scattered; not purged; some appetite.

14*th*. Last night, in consequence of exposure in bed, got excessively cold; the nurse took him into her own bed; he is now warm and perspiring, but has considerable cough; quite lively; appetite good.

22*d*. Discharged, quite well.

Remarks.—This case is worthy of consideration in consequence of the imminent danger in which the child was placed at the commencement of the attack, and the resistance exhibited to the strong remedies applied for the relief of the state of convulsions. In the use of baths in affections of this nature, I believe they often prove ineffectual, from the low temperature at which they are given; parents or nurse-tenders objecting to have them hot, from a foolish fear of their producing faintness. But the state of cerebral congestion at such times, has such an influence upon the general system, that I believe this apprehension is entirely groundless; but even if danger of this kind should ensue, the remedy is simple and speedy, to remove the child from the water at once. The temperature here tried was 108° F., and I can say, from the sensation conveyed to my hand, that it might have been easily used much warmer. Not the least symptom of syncope appeared, although the child was permitted to remain eight or ten minutes in the bath. Having already said so much of the utility of calomel given in large doses at short intervals, I shall not add anything farther at present, except to say, that I believe it was absolutely indispensable in this instance, and that the little trouble and danger subsequently experienced by this child was owing to the decided manner in which this remedy was administered at first.

Are we to suppose, that the rash which appeared on the second day, was scarlatina or not? The time of its appearance, and the state of the tonsils, are in favour of this opinion; the evanescent manner in which it showed itself, and the eruption of measles at its natural epoch, militate against it. But everything, in what I have seen of scarlatina, leads me to believe, that it is far less regular in its progress, and more faint and evanescent in the eruption, than measles; and hence I do not attach much weight to this circumstance. But what I think strongly proves that it was not scarlatina, is the fact, that there had not been a case of that disease in the house for some time previous, nor has there been one since; and the occurrence of tonsillitic inflammation in other cases of measles during the epidemic, is sufficient to prove to my mind, that it was only an unusual variety of the complaint.

Case IX.—*Measles; Croup; Convulsions; Recovery.*—James Whelan, aged 3, was admitted into hospital, May 16, 1842, suffering under an attack of measles, the eruption of which was out on his body; his eyes were tender, and were partially covered with a purulent secretion; there was considerable swelling externally about the throat; on examining the fauces, the tonsils were red, swollen, and inflamed; there was a dry, stridulous cough, but not very frequent. On percussion the chest sounded clear. Diarrhœa. Ol. Ricini, ʒii. 1 *o'clock* P.M. Cough has become much more severe, harsh, and stridulous, with a marked croupy character; skin cool; chest clear; respiration healthy. V. S. ad ʒiv. R. Calom. Ipecac. āā gr. i. Sumat 3tiis horis. R. Antim. Tartar, gr. ii. Aq. Cinnam. ʒiv. Tinct. Opii gtt. x. Coch. min. frequenter.

May 17*th*. Got a great change after being bled; became cold, and worked in convulsions; this morning there is very little eruption out; very little cough, which has lost almost entirely its croupy character; medicine has sickened him very much; looks heavy and sick; pulse 120; skin hot; no diarrhœa. Abrad. cap. Vesic. nuchæ. B. T. statim. Vini ʒi. Cont. pulveres.

May 18*th*. Blister rose well; less heavy in himself, but still considerably so; greatly relieved by the bath; was previously almost suffocated in his breathing from dyspnœa; to-day there is considerable cough, of harsh ringing cha-

racter; wine agreed well with him, and he slept after it; no rash visible to-day, but is came out when he was put into the bath; not much purged; no vomiting. Sinap. pedibus singulis. R. calom. gr. ½. ipecac. gr. i. M. 3tiis horis. Vini ℥ii.

19*th*. Pulse 108; skin cool; no purging, nor vomiting; little cough, which is soft. Sumat. pulv. h. s. tantum. M. paregor. coch. med. sub. Vini ℥ii.

22*d*. Continued to amend till to-day, when a paroxysm of coughing came on, which seemed to partake of the nature of croup and hooping-cough intermixed; bowels free. Hirud. ii. laryngi anteriori. Sinap. pedibus. Vini ℥ii.

23*d*. Pulse 108; appetite good; much better; cough diminished.

31*st*. Quite well; discharged, cured.

Remarks.—The principal points to be considered in this case are, first, the disappearance of the eruption after the bleeding, and secondly, the co-existence of croup with a healthy state of the lungs. How far the sudden recession of the rash is properly to be attributed to the use of the lancet, is perhaps not easy to be determined; the operation itself is calculated to expose the infant to cold, and this circumstance, which cannot always be guarded against, may tend as much as any other to produce the effect; but whatever may have been the cause, such an occurrence must be looked upon as highly dangerous, and therefore to be treated with that decision and promptitude that proved here so eminently successful. It is satisfactory for us to know, that however alarming the recession of the eruption may be, it is not necessarily fatal, even though it may never be re-established in such a way as to reassume the natural course of the disease. The second point is also of importance, because, on the one hand, we are enabled to take measures for the *prevention* of the pneumonia that so constantly succeeds an attack of croup, and prevents a successful termination to a case that might otherwise have recovered; and on the other, we are encouraged to attempt to give relief by operation, should our efforts for the cure of the local affection unhappily disappoint our expectations.

Conclusion.—I feel that this paper has extended to a length which I did not anticipate when I began to write; but I thought as I proceeded, it would lose much of its value were I to deprive it of that completeness it possesses in consequence of its embracing the whole period of the epidemic since its appearance, till the date of the last case recorded in the list. It has since become so mild in its form, and extended to the elder children, that I do not conceive it would be productive of any advantage to pursue the observations farther, especially as my design was simply to give a few practical illustrations of the disease as it occurs in infancy,—a service that I trust will not be unacceptable to the members of the profession generally.—Slightly abridged from *Dublin Journal of Med. Science*, September 1842.

Case of Cutaneous Hemorrhage, accompanied with Spots of Urticaria, (Purpura Urticans of Willan), with Remarks on the Mechanism of Hemorrhage. By R. B. Todd, M.D., F.R.S., Fellow of the College of Physicians, Physician to King's College Hospital, London, &c.

After quoting Willan's description of the disease, and remarking that the recorded cases of this affection are not numerous, Dr Todd gives the following narrative from his hospital report-book:—

William Pocock, aged 39, a policeman; a strong, muscular man; not fat; always of temperate habits, was admitted into the King's College Hospital, on the 22d of October 1841.

During the past summer he has had occasional attacks of diarrhœa, with severe griping pains in the bowels, lasting for one or two days, and then leaving him quite well. The attacks were not attended with vomiting. They were never so severe as to prevent his attending to his duty. His last

attack was about a fortnight ago, when he was severely purged, his evacuations being watery, but of a natural colour; he had no vomiting; the attack lasted two days.

On the 15th, while walking along the street, he perceived a stiffness in the calves of his legs, which continued for that and the subsequent day. On the 17th, in the forenoon, his right knee became stiff, and he observed a number of red spots on the skin of the leg and thigh; in the afternoon the knee became very much swollen and painful, and he was unable to bend it, or bear his weight upon it. During the night the pain and swelling extended to the leg. Next day, (18th), the left ankle became very much swollen and painful. The pain and swelling in the right leg and thigh increased considerably during the day, and he describes the spots as having become larger and darker in colour. Similar spots appeared on the left thigh, but not in so great numbers. This day he was seen by a medical man, who bled him to a small amount, and gave him some purgative pills containing mercury.

On the 19th, pain and swelling attacked the elbows, and a number of spots, each as large as a sixpence, appeared on the hands. On the 20th his throat became sore, and he swallowed with difficulty; the difficulty of deglutition increased during the night, and his medical man applied a blister to the throat the next morning. The night before his admission his eyelids began to swell, and in a short time the swelling extended to the whole face.

He entered the hospital on the morning of the 22d. On the first glance I had of him, when I came into the ward at the usual hour of visit, I fancied he was labouring under acute dropsy. I found an universal œdema of the face, scalp, trunk, and extremities. I immediately asked to see his urine; it was scanty, very high-coloured, depositing the lithate of ammonia in great abundance; of high specific gravity, and devoid of albumen. The notion of acute dropsy, at least in its ordinary form, was therefore abandoned.

I now perceived a strong mercurial fœtor from his breath; and on careful examination of the gums and lips, I felt certain that much of the swelling of the latter was attributable to the small quantity of mercury he had taken. The gums were ulcerated, as also the inner surface of the lips, which likewise received the impression of the teeth. This rapid yielding of the system to the mercurial influence, seemed to favour the diagnosis of acute dropsy, to which, however, the state of the urine was adverse; for it has been often observed, that persons labouring under the acute form of that condition of kidney, which gives rise to albuminous urine, are liable to profuse salivation from even a very small quantity of mercury.

But the most remarkable phenomenon presented by this patient, was the occurrence of an immense number of reddish or livid spots on the skin. These were found upon the forehead, the scalp, the chin, the upper and lower extremities. These spots were raised above the surrounding skin, like the wheals of urticaria; they were circular, very variable in size, some very small, others as large as a shilling, most of them distinct, but some confluent. The greater number of these spots were red or livid, from hemorrhage having evidently taken place into the chorion; those which had only just appeared were whitish, but they soon became red, and the seat of a sanguineous effusion. The largest spots were on the scalp.

The eyelids were remarkably swollen likewise; those of the right side so much so, that the patient was quite unable to open his eye; the lids were livid also from effused blood, which gave him quite the appearance of having got a "black eye" from a blow. The right eyelids were much more swollen and livid than the left, which seemed accounted for by his having lain chiefly on his right side, gravitation favouring the effusion of blood.

Beneath the integument of his throat, where the blister had been applied, a large quantity of blood was effused, so that that surface presented a uniform dark red colour, and at a distance, looked gangrenous. At the promi-

nence of each shoulder there was also a considerable patch of effused blood, that of the right side being much the larger; and it was remarkable that the margins of these red patches were raised above the surrounding skin, like the edges of the smaller spots.

The remarkable disposition to cutaneous hemorrhage here manifested, suggested the inquiry as to hemorrhage from other parts, and as to the hemorrhagic diathesis. On examining his gums, I found them soft and spongy, but not more so than might be accounted for by the mercurial ulceration under which the patient had laboured. He had deep sloughing ulcers affecting the region of the tonsils, and the arch of the palate; and by the side of the uvula there were two very small patches of extravasated blood, but there was no other sign of hemorrhage within the mouth.

He had not had epistaxis, nor hemoptysis, nor any evidence of bleeding from the gastro-intestinal mucous membrane. In short, his previous history gave no proof of a hemorrhagic diathesis.

It was plain, then, that there was considerable cutaneous irritation, from the multitude of nettle-rash spots, with which the patient was covered, and that, attendant upon it there was a very extensive hemorrhage into the skin. Could any cause be adduced for this remarkable state? The man lived well, ate meat, and drank beer daily, and the only cause he could assign was, that he had lately been employed on a very harassing and fatiguing duty.

The functions appeared all tolerably natural; the abdomen was soft and free from pain; pulse 90, compressible; respiration natural; skin cool; feet cold; no delirium. Has latterly had but little sleep, owing in great part to the irritation of his mouth and throat, and the profuse flow of saliva incessantly pouring from the mouth; bowels confined.

The patient appearing much exhausted, he was ordered: Vin. ℥iv. Beef tea. R. Liq. Opii Sedativ. ♏xl. Spt. Æth. Nitrici, ʒi. M. Camph. ʒx.

Ft Haust. statim sumend.; and a chloride of soda gargle for his throat.

23d.—Has slept several times during the night; soreness of throat much relieved; swelling of the lips reduced, but the gums are soft and spongy, and the salivation is profuse. The swelling of the eyelids is less, so that he can open them slightly. The conjunctiva is ecchymosed in the right eye. Several small spots of extravasation exist beneath the mucous membrane on the posterior surface of the lips. Tongue moist and much furred.

Several additional spots, very similar to those of nettle-rash, but having a livid colour from extravasated blood, have appeared on the back of the scalp, also on the arm. The œdema of the right arm is much increased; some of the spots, noticed in the last report, on the extremities, are less raised, and seem subsiding.

The blistered surface on the throat still looks black, and the extravasation of blood has extended some way down the sternum and over the left shoulder.

Bowels confined; urine scanty, high-coloured, depositing a thick yellowish sediment, which disappears under the influence of heat, and on the addition of liquor potassæ; pulse 90: skin cool; no thirst.

R. Quinæ Disulph. gr. i. Acid. Sulph. dilut. ♏ x. Infusi Quassiæ ʒi. ter die.

Beef-tea, half a pint of porter. Owing to the state of his gums, and the difficulty of swallowing, he is unable to take solid food.

24*th*. There is a little improvement in his appearance to-day; the œdema and lividity of his eyelids being less, and his lips less swollen. His deglutition is easier; salivation still continues.

Fresh spots have appeared on his neck and left shoulder, and over the region of the scapula, where they are of considerable size; some of these spots are as large as a sixpence, others not larger than a pin's-head. They are all raised, like the wheals of nettle-rash, colourless at first, but afterwards becoming livid in the centre, where the lividity extends to the whole surface of the wheal. The wheals which came out yesterday have subsided, are losing the livid colour, and acquiring that greenish yellow hue, which always

succeeds to the extravasation of blood. On the nates, there are several large wheals of an oval shape, also livid in the centre, much larger than any observed elsewhere, their great size being probably the result of the confluence of several smaller ones.

Tongue moist and furred; no thirst; p. 72, full and compressible; anorexia; bowels open, evacuations free from blood; urine more abundant, depositing the red lateritious sediment. His legs are stiff; the swellings of the joints much less; complains of a general feeling of soreness, as if he had been severely beaten.

To continue the quinine; to have three eggs daily.

25th. Passed a quiet night; face less swollen; the spots perceived yesterday have subsided, and the discoloration on the shoulder and chest is assuming the greenish yellow hue. Some fresh wheals have come out on the arms and chest.

The œdema and discoloration of the legs are gone, but he complains of pain and tenderness in the calf of the right leg, and some hardness is felt there. He suffers very much from the swelling of his lips and the sloughing of his throat, which evidently are the results of the excessive salivation.

He continued pretty much in the same state for the next four or five days; the patches of discoloration gradually fading; a few new spots appearing, and again subsiding, without any alteration in his constitutional symptoms.

On the 31st the following report was made:

Face appears natural; some fresh spots have come out on the forearms. The cellular tissue of the scrotum is very œdematous, and of a livid colour. His breath has much less of the mercurial fœtor, gums less spongy, and the appearance of the fauces is improving.

Nov. 1st. The spots which appeared yesterday, did not exhibit the same amount of lividity as before, and to-day they have entirely disappeared. One or two new spots of a semilunar form have appeared in the arm.

4th. Several new spots of considerable size have appeared on the right thigh. These spots are in the form of oval rings, measuring one inch five-eighths in the long, and one inch in the short diameter. They are *red* on the surface, and hemorrhage has evidently not occurred in them; two or three small spots on the arm are hemorrhagic. His throat and other symptoms are much improved.

Up to the 13th, spots of urticaria, without hemorrhage, continued to come out on the thigh and arms; they used to appear in the evening and disappear before morning; the throat and gums gradually but slowly improved. He persisted in the same plan of treatment, namely, nutritious diet, saline purgatives occasionally, and sulphate of quinine in small doses, with a small quantity of wine.

On the 14th he was able to sit up, without fatigue; his appetite had considerably improved; throat nearly healed, with considerable loss of substance in the region of the right tonsil, and of the right half of the uvula. No new spots.

On the 20th all medicines were omitted, and he was allowed full diet, and porter. He left the hospital early in December.

Whoever compares the details of this case, with the description given by Willan, of purpura urticans, cannot fail to perceive that the symptoms of the patient were just those of an aggravated example of that disease, and it is not improbable, that its aggravation was due to the early venesection and mercurialization, to which recourse was had, before his admission into the hospital.

It seems to me, however, that a leading feature of the disease was the occurrence of an eruption, presenting the characters of that of nettle-rash, fleeting and changeable like it, attacking different parts of the body, without any regular order or succession, but with, as so often occurs in cutaneous affections, a certain disposition to a symmetrical arrangement. To this was su-

peradded a disposition to hemorrhage, limited strictly to the skin, with the exception of some spots which formed on the inside of the lower lip, and on the side of the uvula. The hemorrhage in the spots appeared to ensue upon, and probably to be occasioned by, the same physical cause which gave rise to the nettle-rash.

In a paroxysm of nettle-rash, there is, doubtless, a considerable hyperæmia of the skin; if this occur in a constitution enfeebled by considerable exertion, as was the case in my patient, and in which, consequently, the nutritive processes must be impaired, it is very likely that a rupture of some of the minute capillaries would take place, and thus hemorrhage occur into the swollen parts of the skin. If this be the correct rationale of the mode of production of the cutaneous eruption, it would seem more correct to consider this disease as a variety of *Urticaria*, and to designate it "*Urticaria Hemorrhagica.*"

That this explanation is the most probable one, I think is abundantly evident from the following considerations:—

1*st*, The spots of urticaria always preceded the hemorrhage, which appeared in the centre of each wheal as soon as it reached its acme, and gradually extended throughout it.

2*d*, The hemorrhagic disposition in the skin was manifested, only when some irritation was excited in it, either that of the urticaria, or some local irritant, as a blister, for the surface to which the blister was applied, exhibited a uniform black colour, owing to the extravasation into the areolar texture of the chorion.

3*d*, The absence of hemorrhages from other surfaces and organs than the skin, (although it did not perhaps prove that there was no hemorrhagic diathesis, yet) showed that some change in the quantity of the blood in the vessels, or in the state of tone of their walls, was necessary to give rise to the hemorrhage in the skin. Doubtless, had the capillary system of the internal integument been similarly irritated, we should have found hemorrhages taking place from the mucous membrane.

The vague manner in which the term *purpura* is employed, in reference to what I have shown to be evidently different forms of disease, is an example of the evil which results from the application of names, in the infancy of science. I should propose to limit the term *purpura* to the hemorrhagic variety of Willan and Bateman, and I think it ought to be completely excluded from the category of cutaneous diseases, among which it has no more right to be enumerated, than typhus fever, or any other constitutional malady.

Since I began to write this paper, I have perceived that Dr Graves has described two cases of purpura hemorrhagica, in which there was added to the internal hemorrhages which usually occur in that disease, "a peculiar exanthematous eruption." It is not stated whether there was any hemorrhage into the skin, nor has the eruption been minutely described; but the mode in which the eruption appeared led me to suspect that it had been of the nettle-rash kind. Dr Graves' cases, however, were examples of true purpura: the peculiar cutaneous eruption seemed to be an accidental addition to the symptoms of that disease.[1]

I shall conclude this paper with some remarks upon the mechanism, so to speak, of hemorrhages.

An opinion prevails, sanctioned by eminent authority, that hemorrhage may occur in two ways; first, by a sweating of the blood through the coats of the vessels without rupture; and, secondly, by rupture of vessels. It is affirmed, that hemorrhage may take place in the former way, because in certain cases no breach of continuity, no ruptured vessel, can be found, even

[1] Dublin Journal of Medical Science, vol. xviii.

upon the most careful examination, on the surface from which the blood escapes. In other cases, again, the ruptured vessel can be distinctly seen, and the source of the hemorrhage, and the mode in which the blood escapes, are equally obvious.

The first doctrine appears to me to be utterly inconsistent with sound views of the anatomy of the capillaries, and the composition of the blood. In order that the red blood shall transude through the walls of its containing capillaries, it is necessary that all its constituents, its liquor sanguinis, and particles, should find a ready passage through them.

The red particles measure from 1-4500th to 1-2000th of an inch; they are compressible and elastic, and by pressure may be made to occupy a much smaller space. Let us suppose they can be compressed into one-half the smallest dimensions above mentioned. It will then be necessary that the pores in the parietes of the capillaries shall be, at least, large enough to transmit particles, measuring 1-9000th of an inch. Such pores would be visible under the microscope, and a membrane containing them in great numbers, as, we must suppose, would be the case with the capillary walls, would appear cribriform under a high magnifying power. To suppose pores of this kind to exist, is quite inconsistent with what we know of the anatomy of capillary vessels; but without them, it would be impossible for the corpuscles to escape, whole and unchanged, through the coats of the vessels. For this reason I am led to deny the possibility of an escape of blood, *in an unaltered state*, through the walls of the capillaries, and to affirm that all the ordinary hemorrhages take place by *rupture* of *blood-vessels*.

Bleeding from the nose, which is the most frequent form of hemorrhage, it is well known, may be readily excited by the removal of even a small portion of hardened mucus from the nasal membrane; it cannot be doubted that under these circumstances, small vessels are ruptured.

A very slight injury to the surface of the skin, will remove a portion of cuticle, and occasion bleeding, evidently from the rupture of vessels; for if cuticle be raised carefully, and without violence, no hemorrhage will occur, even although hyperæmia of the vessels may exist, as is daily seen after a blister.

It is not improbable that the hemorrhage, however trifling in amount, which is so frequent, and often so certain a harbinger of phthisis, may be the result of the rupture of vessels consequent upon the detachment of a portion of hardened or vitiated mucus, which had adhered to the surface of some air-cell or small bronchia.

Again, in cerebral apoplexy, the source of the blood is most probably from ruptured vessels; for in how many of these cases do we not find the blood-vessels more or less diseased? I believe I should not be going too far in stating, that in *every case* of apoplexy, the blood-vessels are in a morbid state.

It is true that another explanation has been offered of the hemorrhage that occurs in scurvy and in purpura. It has been affirmed that, in these diseases, the colouring matter is dissolved in the liquor sanguinis, which transudes. But this opinion does not appear to be founded upon careful observation of the actual state of the blood corpuscles. I have to regret an imperfection in the account of the case which forms the subject of this paper, namely, that I neglected to examine his blood by the microscope. The fact was, that when the patient first came under my care, he was in so depressed a condition, that I felt an insurmountable repugnance to depriving him, even of so small a quantity of his vital fluid, as was necessary for the examination.

From one opportunity I have had, of making a careful examination of the blood in purpura hemorrhagica, I can affirm, that in that case, the colouring matter certainly was not in a state of solution. But the blood corpuscles were not healthy; and that examination led me to suspect, that in purpura and analogous diseases, the genesis of the blood corpuscles is materially

interrupted, and that the main alteration of the blood, *that is visible*, consists in the consequent imperfection of these particles. What its chemical changes are I am unable to state.

I shall here transcribe the notes I made at the time I examined the blood of the patient labouring under purpura.

March 31, 1840, 10 *o'clock* P.M.—Examined some blood from a boy affected with purpura. It was taken from a vein about two o'clock in the day, and received into a small bottle containing some weak sugar water. The corpuscles were distinct and large, most of them measuring from 1-2000th to 1-3000th of an inch; *but a vast number of much smaller, roundish, or irregular bodies existed;* some of these seemed like shrivelled blood corpuscles, but the great majority *little aggregations of granules adherent to each other*, with small particles of colouring matter intermixed, forming bodies ranging between 1-4000th and 1-5000th of an inch in diameter. These bodies were very much *more numerous* than the blood corpuscles, which I felt satisfied, on careful examination, were perfectly healthy.

On the 2d of April I made another examination of this boy's blood, obtained in a similar way, with the same result, excepting that the small irregular granular bodies did not appear to be quite so numerous.

April 20th. The boy has completely recovered, and lost all spots of purpura. I this day examined some of his blood, and find great numbers of very natural and perfect blood corpuscles, some with the wrinkled appearance towards their margins, and *a very few of the granular bodies* above described.

Recent microscopic research has rendered it most probable that the blood corpuscle is a nucleated cell; and that its generation takes place in a precisely similar way to that of the primary cells of the tissues, whether its source be derived from already existing corpuscles, or elsewhere. Seeing, then, the great number of granular bodies, in my first examination of the purpura blood, which, subsequently, gradually diminished as the disease subsided, I thought it not unlikely that these bodies might be blood corpuscles in an imperfect state of development, and that the imperfection of the formative process was due to some alteration in the chemical and vital properties of the blood. The slight differences which modern animal chemistry has shown to exist, between the proximate animal elements, seem to justify the opinion, that even a slight change in the properties of one or more of these elements in the blood, might retard, or materially modify the development of the red particles. It would be highly interesting, if it can be shown by subsequent observations, that a main defect in the blood in purpura and scurvy is, as I venture to suggest, *an arrest in the genesis of the blood corpuscles.*—*Dublin Journal of Medical Science*, Sept. 1842.

[In connection with Dr Todd's paper, we refer our readers to three valuable original communications in recent Numbers of this Journal, viz., those by Dr Hay, (March 1842, p. 264); Dr Allan, (June 1842, p. 501); and Mr Miller, (July 1842, p. 567). Two cases of the hemorrhagic diathesis in the female, reported by Professor Quadrat, are given at p. 391 of the Periscope of the Number for April 1842. A note by Dr Bennett on the state of the blood in this disease, will be found at p. 786 of the Number for August 1842.]

Six Cases of Diarrhœa treated with Monesia. By Q. Gibbon, Salem, N. J.

Case 1st.—Mrs K.—Married. Had laboured under chronic diarrhœa, accompanied with ulceration of the intestines, for two years. Three or four months ago she was put upon small doses of acet. of morphia, which after several weeks continuance arrested the disease, and the patient remained for

two months apparently perfectly well. At the expiration of this time the disease suddenly returned, and soon regained all its former activity. The extract of monesiæ was now commenced in doses of 5 grs. three times a-day, and afterwards increased to 7 grs. four times per day, and continued for ten days, but without any other benefit than a slight decrease of the discharge for the first two days. The medicine was then discontinued, and the morphia substituted with its former success.

Case 2d.—A child of W. H., affected with diarrhœa of 18 months standing, had used anodynes, alteratives, and astringents freely, but without permanent benefit. The ext. monesiæ, given in doses of two grs., three times per day, assisted by the warm bath and frictions with flannel, checked the discharges in two days, and removed all traces of the disease in two weeks.

Case 3d.—J. M., aged 70—health delicate, had a diarrhœa, with short intermissions, for six months—had been treated with creta cum hydrarg., with but temporary relief. Took six grs. of monesia four times per day, from the 2d to the 10th of November, assisted by a few grs. of pulv. doveri., occasionally at bed time. The discharge ceased in two days, and upon the tenth he expressed himself perfectly well.

Case 4th.—Mrs J. Diarrhœa of four or five days continuance—slight fever, tormina, stools bloody and slimy. Had resorted to no previous treatment. Took 8 grs. of ext. mones. three times the first day, which checked the discharge, and allayed all unpleasant symptoms.

Case 5th.—A child of four years of age, affected with a bowel complaint, which had commenced in the summer, and continued unchecked until November, though treated with a variety of astringents, and subjected to counter-irritation upon the abdomen. The monesia was given in doses of 2 grs. five times daily for six days, with the effect of gradually diminishing the discharges, changing their colour and consistence, and creating a vigorous appetite, which the child had not previously enjoyed. Having no more of the remedy, I was compelled to relinquish it. Dover's powder and flannel frictions were substituted, and I had the satisfaction of seeing my patient perfectly relieved in another week.

Case 6th.—In this case the remedy entirely failed, as in the first case. It was one of diarrhœa supervening upon phthisis pulmonalis, and had been previously treated by creta cum opio., acet. of lead, acet. of morphia, and several of the vegetable astringents, without benefit. The monesia was prescribed at first to the amount of 15 grs., and afterwards increased to 40 grs. per day, and persevered in for three weeks, when, as no abatement of the symptoms was perceived, the remedy was discontinued at the request of the patient.

Remarks.—That the above cases may be entitled to their just weight in the evidence now accumulating, both for and against this new remedy, it may be well to state, that the few last doses taken by Mrs K. in the first case, occasioned slight nausea, accompanied by a slight burning in the stomach. With this exception, I have not witnessed any of the irritating effects detailed by St Ange. My doses, however, were not so large as he prescribed. The above cases lead me to infer that monesia is more astringent than tonic in its operation.—*American Intelligencer.*

Salem, Jan. 6th 1842.

Ulcer on the Thorax communicating with the Right Lung, in a Case of Pulmonary Consumption. By J. Stewart Allen, Esq., Assistant-Surgeon to St Marylebone Infirmary.

Mary Cain, aged 31, of fair complexion and scrofulous diathesis, had been a patient of mine for some time. In the beginning of last winter she had an attack of inflammation of the right hip-joint, there was lengthening of the

limb, accompanied with very severe pain; this gave way to repeated local bleedings, and the occasional use of iodine, quinine, and morphine; however, she was confined to her bed from this cause during a great part of the winter, during which time she had occasional attacks of cough with slight hæmoptysis, and became much emaciated. On examining the chest the upper part of the left lung appeared nearly solid; the upper part of the right was also dull on percussion; in March she regained flesh, and became so much improved, that she was able to leave the house: unfortunately, she caught fresh cold, and had a return of the cough with profuse expectorations and perspirations; there was no pain or uneasiness in the hip-joint. Early in May a scrofulous ulcer (which she had previously been troubled with) broke out in the right side of the thorax; it quickly put on a phagedenic character, and rapidly laid bare a portion of the fourth and fifth ribs. The glands in the axilla, on either side, suppurated. On the 25th of May my attention was directed by the patient to the curious noise that came from the ulcer, like (as she said) a person breathing. On examination I found that at each expiration a considerable portion of air was expelled through the ulcerated opening, sufficient to extinguish a piece of lighted paper; there was also a portion admitted at each inspiration. This was readily perceived by placing a piece of lint over the ulcer, which could be seen to be drawn inwards during the inspiration. She continued to take quinine and morphine, from which she felt, or fancied she felt relief. On the morning of the 24th of June she had been left alone for a short time by the person who usually attended on her; on the girl's return she found the bed deluged with blood, which was flowing freely from the ulcer on the chest; the blood (as she expressed it) "pumped out" when the woman breathed or attempted to speak. She died in about ten minutes, having, it was supposed, lost about two quarts of blood. No examination of the body was permitted.—*Lancet*, July 30, 1842.

SURGERY.

On the Treatment of Fractures by Starched Bandages. By M. Seutin, of the Hospital St Pierre, Brussels.

[M. Seutin's method of treating fractures, by bandages moistened with a solution of starch, and allowed to consolidate around the limb, has been known in this country for some years, and has been practised to a limited extent in some of the London hospitals, the Edinburgh Infirmary, and elsewhere. In a treatise recently published by him at Brussels, ("*Du Bandage Amidonné*," &c.), he has fully described his method of applying the starch bandage, and has recounted the advantages which he conceives to belong to this method of treatment. He contrasts his plan with the established method of applying splints and bandages, and with the proceeding of M. Larrey. The latter, as is well known, consists in the application of narrow trusses of straw, firmly bound, and applied by means of bandages dipped in an agglutinative discutient mixture of camphorated spirits, sub-acetate of lead, and white of eggs. This method is fully detailed in a thesis read before the Faculty of Medicine of Paris, in 1832, by M. Hyppolite Larrey, and of which a reprint has been given by M. Seutin, in his recent treatise.

The following account of M. Seutin's method of applying his bandage, is derived partly from a report on the subject, presented by a commission of the Academy of Medicine of Paris, also printed in M. Seutin's work, and partly from personal observation of M. Seutin's practice.]

An idea of this method of putting up fractures, will best be given by detailing the manner in which M. Seutin proceeds, in treating, for example, a

fracture of the leg. Sometimes he employs the bandage of Scultetus, or the eighteen-tailed bandage; sometimes, though less frequently, a common roller. In the latter case, the limb being steadily placed on a pillow, he commences by enveloping the toes in small bandages. The limb is then raised by three assistants, who make the extension and counter-extension, whilst the surgeon envelopes the limb with the roller, (without starch), from the foot to the knee. Care is taken not to make undue pressure on any projecting points, such as the head of the first metatarsal bone; and this and the tendons of the hamstring and anterior tibial muscles are protected by small pads of lint. The splints, which are formed of pasteboard, are next applied. Of these there are three:—one to fit to the back of the leg, corresponding with the limb, its size and figure, and having a small notch in its lower end, to fit over the *os calcis*. The two others are made to fit the limb and foot, on the lateral aspects. In preparing the pieces of pasteboard, M. Seutin recommends them to be torn rather than cut; for the hard defined edge made by cutting is more apt to press injuriously on the skin, than the soft irregular border produced by tearing. Previous to their application the splints are to be softened by immersion in tepid water, by which they are made soft and pliant, and easily moulded to the form of the limb. Previous to applying the pasteboards, soft pads of charpie or tow are prepared to fill up the irregularities of surface of the limb; thus the concavities above and below the maleoli, and the space between the calf of the leg and the heel, over the situation of the *tendo-achillis*, are filled up. The pieces of pasteboard are applied, so as to leave between their edges, on the front of the limb, a space of one or two fingers breadth; and the lower edge of each of the latter pieces is bent under the sole of the foot. The starch bandage is now applied over the pasteboards. It is not necessary, as is generally supposed, to soak the bandages in the starch. If the end of the roll of bandage is dipped in it, it takes up enough to answer the purpose of future consolidation. The bandage being completely applied, the limb is placed upon a pillow, and exposed to a moderate heat, or to the rays of the sun, so as to obtain a more rapid desiccation; and in general, as a measure of precaution, a couple of light pasteboard splints are placed outside the starch bandage, and secured with a few loops, so as to preserve the limb in a right position, till the bandage has acquired sufficient rigidity.

When the fracture is simple and uncomplicated by any wound, M. Seutin dresses it in the manner now described; but if any wound exists, he makes in his starch bandage openings corresponding with the solutions of continuity of the soft parts, so as to permit of the escape of the discharges, and to allow the dressing of the wounds, without any risk of disturbing the fractured bone.

When the starch bandage is completely dry, which commonly is the case in from thirty to forty hours, though it may be dried more rapidly by artificial heat, it forms around the limb a solid shell, which closely invests the fractured bone, prevents the movement of the fragments on each other, and retains them as exactly as possible in their natural position. Under these circumstances, M. Seutin permits his patients to move freely in bed; he even allows them to rise, and to walk with crutches, the limb being supported by a sling bandage passing round the neck and under the foot. Not only does he feel that this exercise does not produce any bad effects, but he considers that it maintains a healthy state of circulation and digestion, and renders the treatment of fractures of the lower extremities less tiresome and distressing.

M. Seutin applies the starch bandage at the earliest period after fracture. Neither swelling, nor the existence of inflammatory action around the fragments, prevent him from following this practice. He has seen no cause to dread the constriction or gangrene which have been supposed to be among the more formidable objections to other forms of immoveable apparatus. He

trusts to the facility with which he can examine the state of the injured parts and treat them accordingly. If he has the least suspicion that this examination is necessary, he cuts up, with a pair of strong scissors, that portion of the bandage corresponding to the space between the pasteboards, and by cautiously opening the split bandage he can inspect the limb, and rectify, by pads of lint or otherwise, undue pressure on any part.

If, from the occurrence of swelling, the bandage has become too tight for the limb, it is merely again secured in its place, but less lengthy, by a fresh starched bandage applied outside. If, from the subsidence of tumefaction, a space is left between the limb and bandage, it can be made to fit by causing the cut edges to overlap, or by cutting out a finger's breadth or so of the bandage in front, and reapplying it by a fresh starched roller.

The advantages which M. Seutin conceives to be obtained by the starch bandage are :—

1. That whilst it is, when dry, sufficiently firm to maintain the fractured bones in proper apposition, even when the patient is restless, it is so light as not to interfere with free movement of the articulations, and enables the patient to enjoy the advantage of moving about during the progress of his cure.

2. That, from its being moulded exactly to the contour of the part, and fitting into all its irregularities, it forms, with the contained limb, one entire solid, which cannot be moved without the concurrence of all its constituent parts, and that from its acting not merely on certain points, but over its whole extent, it is less susceptible of displacement.

3. That it fulfils the triple indication of maintaining coaptation permanently, preventing displacement, and pressing uniformly and regularly over the whole limb.

4. That, from the facility with which it can be moulded, so as to fit to any part of a limb, and from the readiness with which it can be cut, and openings made in it, without impairing its general solidity, it is adapted not only to the treatment of compound and complicated fractures, but to caries, necrosis, excision of joints, and other affections accompanied by sores from which discharges take place, and where, whilst the wounds can be readily got at, the movements of the part may be effectually restrained if necessary.

On Dislocation of the Knee-Joint. By Jonathan Toogood, Esq., Senior Surgeon to the Bridgwater Infirmary.

Complete dislocation of the knee-joint is so very rare an accident, that I believe few surgeons have ever seen it. I furnished Sir Astley Cooper with the following case, which he published in his work on Dislocations. He had never met with a similar one, nor has any surgeon of my acquaintance connected with the London or provincial hospitals, although I have related it to a considerable number; neither do I remember to have read of such a case. I learnt also, in a conversation with Dupuytren and Roux, that it had not occurred in their practice.

Dec. 5, 1806. Francis Newton, a strong, athletic man, thirty years old, fell from the fore part of a waggon heavily laden with coals, and, entangling his foot in the frame-work of the shaft, was dragged a very great distance before he was released. I saw him two hours after the accident; the left knee was very much swollen; the tibia, fibula, and patella were driven up in front of the thigh, and the os femoris occupied the upper part of the calf of the leg, the internal condyle being nearly through the skin. It was a complete dislocation, and the appearance of the limb was so dreadful that I despaired of being able to reduce it; but to my surprise it was more readily effected than I imagined. By placing two men at the thigh whilst I extended the leg, the reduction was immediately effected. The whole limb was

placed in splints, and the strictest antiphlogistic treatment observed, with the most perfect quiet. The symptoms were very mild, and, by carefully watching him, he suffered very little inflammation or pain. At the expiration of a month I allowed him to get up, and on the 29th of January he came into this town, a distance of four miles, in a cart, and walked from an inn to my house, with his leg but little swollen, and having some motion of the joint. He eventually recovered very good use of his limb, and walks with so little inconvenience, that he has followed his business as a waggoner ever since, and this day (November 30, 1822) I have seen him walking by the side of his team with very little lameness.

I am induced to send you this case, which occurred many years ago, in consequence of having read in your last Number a short account of one of a similar nature by Mr Coote. In his case, I should imagine, from the speedy recovery of the patient, the dislocation was not so complete as in that above related; but, as such cases are so very uncommon, I hope he will publish the details. The successful issue of both cases clearly proves his position, "that in dislocations of the tibia forwards, or of the femur backwards, the injury to the ligaments and other soft parts about the knee-joint is not necessarily such as to render the recovery of the limb in a perfectly useful state a forlorn hope, as has been represented by writers of high authority, some of whom have almost regarded amputation as *primâ facie* necessary to save the life of the patient."—*Prov. Med. Journ.*, June 1842.

Partial Dislocation of the Knee-Joint. By J. Ballard Pitt, Surgeon, Mattishall, Norfolk.

A young lady, on the 2d of February, produced partial lateral dislocation of the right knee-joint, by falling down stairs with great violence; she was immediately carried to her bed-room, and laid upon a mattrass. On examination I found the internal condyle of the femur projecting considerably inwards, and the external tuberosity of the tibia outwards; she shrieked violently, and complained of severe pain, similar to cramp, down the outer side of the leg. Having placed the patient on her back, I made gradual extension and counter-extension, which, together, soon brought the joint into its former position; lateral splints were then put on, and bandaged in such a manner as to allow leeches and lotions to be applied. A draught containing half a drachm of henbane was taken at bed-time.

Feb. 3d. She passed a restless night; there is considerable swelling of the joint, with much pain and tenderness, particularly along the course of the internal lateral ligament. Eighteen leeches, evaporating lotions, and a purgative draught were ordered.

4th. Bowels relieved; did not sleep much; swelling increased. Twenty leeches to be applied, and the lotion continued.

5th. She complains of pain, extending up the thigh; great heat of the joint; swelling and tenderness of the same; and a sensation of effusion upon pressing down the patella; the bandages were loosened; twelve leeches were applied, a pill containing a grain of opium and three of calomel, and an aperient draught in the morning, were prescribed.

6th. Symptoms nearly the same, with numbness of the leg and foot.

7th. More pain felt on the outer side of the joint. Leeches and lotions continued.

8th. The swelling and heat are a little diminished, but she complains of a sharp pain near the inner margin of the patella.

9th. Pain the same. Leeches and lotions continued, and to take an aperient draught the following morning.

From the 9th till the 15th nothing particular occurred; the swelling and pain decreased; and on the 16th I removed the splints, fomented the joint,

and made a little passive motion, which caused severe pain on its inner side, and a sensation of stiffness over the centre.

17*th.* Passive motion repeated.

19*th.* Placed the leg over a double inclined plane for a short time. From this date perfect rest was allowed till the 25th, when a little flexion was again tried, and borne with much less suffering. After this period, a little linim. saponis was rubbed in daily, and she was put to sit upon the edge of a table, and made to bend and extend the limb several times, which gradually gained strength and freedom of motion. She now protects the joint with an elastic knee piece, and is able to walk comfortably.

Remarks.—Having treated this uncommon kind of dislocation, I was anxious to publish the details, in order to impress upon the minds of those medical gentlemen who have not seen a similar case, the importance of early and continued application of leeches and lotions, which I consider to be the only safe and effectual means of keeping down the inflammatory symptoms resulting from such a formidable luxation. What ligaments were injured, I cannot exactly tell; but I think the internal lateral, and probably the posterior crucial, suffered in some degree, the cartilages and synovial membrane being of course very much disturbed; the numbness complained of down the leg, particularly on the outer side, must have arisen from some particular pressure or disorder of the peroneal nerve, which I attributed to the biceps tendon.—Abridged from *Prov. Med. Journ.*, June 18, 1842.

Successful Transplantation of a Sheep's Tooth in the Socket of one of the Incisors of a Child. By Robert Twiss, M.R.C.S., Castle Island, Kerry.

On the 24th of April 1841, after having extracted the remainder of a broken front tooth from Maria Godfrey, a young lady, aged twelve years, I put in its place the front tooth of a yearling sheep, reeking from the jaw of the living animal, having previously shortened its root about a quarter of an inch. After the first week, during which there was little promised success (the tooth being much too small for the space, and the child not attending to directions), it became more and more firm, with every indication of its having taken root; and by accurate measurement I find it has enlarged, but not so much as it would have done in its pristine state, a circumstance observed in transplanted trees.

Mr Twiss was led to select the sheep, on account of the extreme cleanliness of this animal, and the beauty and aptitude of the teeth for the purpose. He recommends that teeth be taken only from sheep two or three years old, as at that age they are about the size of adult human teeth, and they are more likely to grow when transplanted. The root, he observes, may be shortened or pared, if necessary, to fit in its new situation. The new tooth may be kept *in situ* by waxed silk ligatures.—*Dublin Journal of Med. Science*, Sept. 1842, p. 113.

On a Simple Method of Arresting Bleeding from the Nose. By Dr Negrier of Angers.

The plan which Mr Negrier proposes is, he says, simple and certain. It is preferable to the occlusion of the nostrils, as that is difficult to maintain, especially in sleep. During three years that, in numerous cases, he has tried this method—which is simply elevating the patient's arm—he has never found it to fail. After detailing several cases, he thus explains the rationale of the plan. When a person is standing with the arms at the side, the blood which escapes from the upper part of the arch of the aorta takes two direc-

tions, viz., towards the head and towards the arms, and that which goes to the head is almost equal in quantity to that which is received by both superior extremities. If, however, the individual, who was formerly hanging his arms, raised them, the blood which was flowing horizontally and without effort from the subclavian into the brachial arteries, must then ascend against the weight of the column of blood contained in the latter; and as there is nothing in the act of raising the arm to increase the force of the circulation, it follows that part of the force formerly expended in sending the blood up the carotids must now be subtracted, and added to that which drives it through the brachial arteries. This explanation may or may not be confirmed by experiments. The subject is worth investigation.—Abridged from *Archives Générales de Médecine*, June 1842.

FORENSIC MEDICINE.

Curious Attempt to procure Abortion.

I was requested to see the following case with a medical friend, and wrote down the particulars for him at the time, partly from the information he furnished and partly from our joint observation.

I may now venture to publish them, without exposing the lady to the shame or punishment which she perhaps deserves.

Mrs ——, a good-looking woman, called on me at eight o'clock on Saturday morning, Feb. 8; she informed me that she had had a large discharge from the vulva, containing many clots of blood, and said that it was very like a miscarriage,—the pains were like labour-pains. I asked her whether she had any reason to suppose that it *was* a miscarriage? to which she replied, "No; I am not married." I directed her to go home and to lie down, and gave her a draught containing twenty-five drops of tincture of opium, with aromatic confection and cinnamon-water.

I was sent for at three o'clock, P.M., when she complained that the pains continued, and that the urine passed involuntarily. I examined the parts, and found a tumour in the vagina. Upon telling her that there was something more than should be, she confessed that she had had connection with a young man three weeks previously, and dreading the consequences had introduced a piece of bone to produce abortion. The bleeding still continuing, I gave her an injection of sulphate of zinc and tincture of opium. The hemorrhage continued, and at five o'clock I again saw the patient. The female syringe introduced into the vagina was not stained with blood. I then requested permission to inspect the parts, in order to ascertain whence the hemorrhage proceeded. Blood and water issued from the urethra.

Second day. I requested Mr —— to accompany me at nine o'clock to the patient's house. The pains came on about every five or ten minutes. The uterus was nearly of the natural size; the os uteri was not dilated in the slightest degree. The tumour was evidently produced by distension of the bladder. A catheter, introduced without any difficulty, brought away coagulated blood; a little urine escaped by the sides. The patient remarked, "That is the passage up which I pushed the bone." The bladder and uterus were forced down during the pains; and at the same time urine, mixed with blood, escaped.

We ascertained the following particulars on the spot:—She had been married, and had had one boy, now living. Had been a widow eight years, and declared that she had had no connection since her husband's death until Sunday the 19th of January, and a second time on Friday 24th of January. She began menstruating on the same day (24th), and menstruated regularly. Upon Friday, February 7th, at about nine o'clock, P.M., she introduced a

bone netting-mesh, about half an inch broad. The edges of the instrument, which we saw, were keen. It produced pain at the time, and blood escaped. At ten o'clock pains like labour-pains came on, and continued all the night of the 7th. She passed a potful of water and blood, containing several clots. Ordered ten grains of Dover's powder, and two of calomel.

Third day. Has passed a sleepless night. The involuntary discharge from the bladder still continues. The pains have ceased; her bowels have not acted since the 7th. She was ordered a mixture with castor-oil, and the bowels acted freely.

Fourth day. The patient is less anxious, and has passed a quiet night. The discharge of urine is less frequent, but it is deeply tinged with blood; the tongue is brown and furred; the pulse feeble. She was ordered two grains of calomel and a saline aperient three times a-day. The bladder remained distended. When the catheter was introduced, urine mixed with blood escaped.

Fifth day. She had a good night, and is much less anxious; the pulse is soft and tranquil; the bowels open; the urine continues bloody.

Sixth day, seven o'clock, P.M. In the morning she passed nearly a teacupful of coagulated blood by the urethra; the clots of blood were dark and tender. The urine is now free from colour, and is no longer passed involuntarily. The bladder was found upon examination to be of the ordinary size.

Seventh day. The patient is well; her chief anxiety is about the other matter which tempted her to the commission of the injury on her person. She has since menstruated.

I invite Dr Marshall Hall's attention to the excito-motor phenomena developed by the blood in the bladder. F.

*** This case has been duly authenticated.—Ed. L.—*Lancet*, Sept. 3, 1842.

Poisoning by Binoxalate of Potassa.

On the 26th of November, 1841, the wife of a captain in the French army, who had recently been confined, sent, by order of a physician, for thirty grammes of tartrate of potassa, to a chemist in Algiers. The chemist, by a fatal mistake, of which one of his assistants was the first cause, sent thirty grammes of binoxalate of potassa, divided into two equal packets. One of these was dissolved in lukewarm water, and taken by the lady, notwithstanding the disagreeable taste which she perceived. Scarcely was it swallowed, when the patient was seized with violent pains in the stomach, and soon after was affected by horrible convulsions, and died in less than ten minutes. She was able to articulate only the words, "It burns me, I am killed; I am poisoned." It was impossible to administer any antidote.

On opening the body, twenty-two hours after death, incipient putrefaction of the lower parts of the abdomen was discovered. The orifices of the stomach were hermetically closed, in consequence of the contraction of the fleshy bundles which surround them. The mucous membrane of the stomach was much inflamed; the duodenum and small intestines presented the same alteration. The blood in the heart and vessels was fluid.

To this deplorable fact may be added an observation of a case of poisoning by this same substance, in a woman of the same age, reported in the March Number of the *Journal de Pharmacie*. In this case the dose was double, the woman having swallowed, at one time, thirty grammes of this salt, dissolved in water. She experienced serious symptoms only at the end of an hour and a-half, and the case was successfully treated by administering first a mixture of chalk, and afterwards antispasmodics.

What a difference in the termination of these two cases, which are presented in the same circumstances, except that the person who was cured had taken twice as much poison as she who died almost immediately! Every

thing shows that in the latter the poison had been rapidly absorbed: but why was not the same phenomenon presented in the other patient? What were the essentially different conditions which caused so striking a variation in the issue of the two cases? The observations just quoted, unfortunately are deficient in a host of details which would be indispenable for solving this problem.

But it is no less evident, that the salt of sorrel (*sel d'oseille*) acts on the nervous system with great energy, and that, swallowed by mistake, even in a small dose, it may cause death. The following case, taken from the April Number of the *Annales D'Hygiéne*, is remarkable in this respect:—

A woman, aged 28, wishing to make her milk pass away, procured some salt, of which she was recommended to take a teaspoonful every morning. The first day, soon after having swallowed the prescribed medicine, she was attacked with very abundant vomiting, which the "mothers" of the neighbourhood did not fail to attribute to the revulsion of the milk. The next day, after a second dose, the symptoms became more alarming; the vomitings were bloody, blackish, and more abundant than the day before; there was great pain in the epigastric region. The third day, at five o'clock in the morning, the woman took another dose of the salt; she lost her reason, and became insane: vomiting supervened, and death occurred so promptly, that the medical man called in found her dead. She died at six o'clock in the morning

The salt which the deceased had swallowed was examined, and it was ascertained to be binoxalate of potassa. The teaspoon which she had used would hold about five grammes, consequently she had taken altogether fifteen grammes.

The matters vomited before death having been analysed, it was ascertained that they contained a large proportion of salt of sorrel, for about two grammes of perfectly crystallized oxalic acid were extracted from them.—*Chemist*, Sept. 1842.

Poisoning by Copper.

It is known that wine merchants are in the habit of placing a small copper vessel at the bottom of the cask of wine which is in draught in their cellars, and of drawing the liquid into this vessel, which is not always in a state of perfect cleanliness. This negligence may be productive of fatal consequences. A few months ago, a young man at Avenay, was about to mount the Rheims diligence. Before setting out, he asked his father for "a stirrup cup," and the latter took him to a cask of old wine, which was tapped only on great occasions. But scarcely had the young man drunk this glass of wine, when he was seized with violent pain in the digestive organs; he was poisoned. Happily the quantity of verdigris which he had swallowed was so considerable, and the vomitings which it immediately caused were so violent, that he almost entirely threw up the poison. Milk, which he afterwards drank in abundance, freed him from the rest. He recovered.—*Chemist.*

Poisoning by the External Application of Laudanum.

A young writer, M. Camille B., whose *débuts* at the *Comédie Française* had been remarked, has lately perished in consequence of a fatal imprudence. Being attacked with a slight indisposition, M. C. B. was directed by his father, who is a physician, to apply a cataplasm, into which a few drops of laudanum were to be poured, to the stomach. To alleviate his pain, which was very severe, he poured, instead of three or four drops, the whole contents of the bottle into the cataplasm, and went to sleep.

The poisoning was almost instantaneous. The most prompt assistance

which was rendered him was in vain; he died in a few minutes.—*Chemist*, Sept. 1842, *from Journal de Chimie Médicale*, Aug. 1842.

Symptoms caused by Cantharides.

An attempt to poison was lately made at Evran (Ille et Vilaine) on two young girls, one aged twenty-two, the other fourteen, servants to an innkeeper of that town. A tinker named N., who occupied a room near that of the two girls, mixed with their food some powder of cantharides, doubtless hoping to accomplish some abominable design, aided by the properties attributed to this powder; but the violent colics which supervened, soon disclosed the culpable project of N., who has been committed to the prison of Dinan.—*Chemist*, Sept. 1842, *from Journal de Chimie Médicale*, Aug. 1842.

STATISTICS.

Statistics of Typhus during a residence of Two Years and a Half in the Glasgow Royal Infirmary, Eighteen Months of which were devoted exclusively to the care of the Patients in the Fever Wards. By Dr Anderson, Glasgow.

By Typhus, in the following pages, is meant the ordinary epidemic fever of this country, essentially marked by contagiousness, and by its maculated eruption, all admitted to the Fever Hospital not being cases of fever. The following table of patients, admitted from November 1837 till November 1838, may serve to illustrate this:—

Typhus, eruptive,	1885
Do. eruption doubtful,	143
Fever, without eruption,	324
Small-pox,	75
Other diseases,	73
	2500

From the table of the sex and age of the patients for the above year it appears, in agreement with the results of Dr Cowan for 1835-6, that fever is most frequent from the age of 15 to 20 in females, and from 20 to 25 in males.

There were admitted:—Males, 1143; Females, 1187.

Of the whole, two-thirds were of average robustness of constitution; and of 457 males more particularly inquired into, 112 acknowledged habits of intoxication.

The mortality is great under 5 years; is very small from 5 to 15; nearly twice as great from 15 to 25; again almost doubled from 25 to 35; and afterwards increases with the age; while it is found much greater in the eruptive than in the non-eruptive fever, being in the former 1 in 6.7, in the latter 1 in 17.2. The deaths among the sober were 1 in 7.9; among habitual drunkards 1 in 2.8; among those occasionally drinking to excess, 1 in 4.1.

Previous Febrile Diseases.—Of 828 cases, male and female, 74, or 9-100ths, stated that they had previously suffered under fever. Of this number, which is nearly 1-10th of the whole, many probably had not had *real* continued fever; but many, on the other hand, who had had it, may, from want of memory or other causes, have denied it; so that this may be, on the whole, a fair enough statement of the case.

Birthplace.—During part of the years 1836-7-8, there were admitted

3452 patients; of whom there were per cent., Scotch, 69.71; Irish, 29.67; English, 1.39; Foreign, .26.

Residence.—Of 1100, very nearly one-half inhabited the suburbs, exactly 4-10ths the town proper, and nearly 1-11th villages and towns around Glasgow, some being at a considerable distance. Within the town, the centres of disease are the localities which are most densely peopled, and where the greatest misery is known to exist.

In connection with the question of residence, the *duration of the stay in Glasgow*, previous to seizure, is a question of some interest. Of 828 cases, of both sexes,

90 did not reside in Glasgow.
610 had lived in Glasgow for above a year; and
128 had lived in Glasgow for a year, or less.

Hence it would seem, that recent immigration to town has some influence in rendering obnoxious to contagion or the other causes of fever, or we should not find, that of the 738 residing in Glasgow when attacked, 128 (or above one-sixth) had been inhabitants of the city for less than thirteen months; and this would seem to support the opinion, that from the disease occurring once only in a lifetime, the liability of the inhabitants of any one place to be affected, is, after a certain time, worn out; so that the fuel for the maintenance of the disease, must be in part supplied from without.

Nearly one-half of the cases had been exposed to contagion; but of those decidedly eruptive, a greater proportion than of the others, one-seventh of the whole, exclusive of those exposed to contagion, attributed their illness to cold or fatigue; and it may be remarked, that the great majority of those whose disease arose from contagion had been in constant intercourse with affected persons.

Observation as to the date of the occurrence of the *symptoms* in above 60 cases, gave the following result:—

The invasion of the disease is sudden in above half the cases. Of the symptoms above enumerated, those which occur in less than half the cases are, nausea, pectoral oppression, abdominal pain, and diarrhœa; pectoral oppression and diarrhœa being those most rarely met with. Anorexia occurred in every case. Those which occurred in more than 9-10ths of the cases were, headache, thirst, lassitude, and rigors; the frequency being in the order of enumeration. Those of intermediate frequency were, pains and cough.

The symptoms occurring on the first day, in the majority of cases, are, lassitude, rigors, and headache. Pains, thirst, nausea, pectoral oppression, abdominal pain, and diarrhœa, occur most frequently on the first day, although in fewer than half the cases. Anorexia is most frequent from the second to the fourth, and cough after the fifth day. Above one-half of the patients took to bed from the second to the fourth day; nearly one-third on the first; one-sixth on or after the fifth day.

The proportion of patients with eruption, to the whole number of fever cases, is 80 to 100. It is, however, to be remarked, that in the first six months recorded, this proportion was greater than in the following ones. In the former, too, the gross number of admissions was greatest, while, of cases without eruption, the admissions are nearly the same for each month; the great difference between the admissions in November 1837 and October 1838 being in the true eruption cases; a new proof that, since the eruption is proportional in frequency to the violence of the epidemic, it must be reckoned one of its most characteristic symptoms. The day of the fever on which the eruption appears is not easily ascertained in an hospital, but it occurs rarely on the 3d, pretty often on the 4th, but most generally from the 5th to the 8th inclusive, occasionally much later. The date of its disappearance was observed in 130 cases, from which it would seem to be most frequent on the 16th, 17th, and 12th days.

Of the whole cases, it disappears in

One-fifth, from the 7th to the 12th day inclusive.
Two-fifths, from the 13th to the 18th.
Two-fifths, on and after the 19th.

Of the 28 cases in which it disappeared from the 7th to the 13th day, it was copious and dark in none; of the 49 from the 14th to the 18th day, in only three, or 1-16th; while of the 53 in which it persisted beyond the 18th day, it had been excessive in 25, or nearly one-half.

The persistence, therefore, of the eruption is connected with its intensity, or in other words, with the severity of the disease; for *that* is always in the compound ratio of the copiousness and darkness of the eruption. In the severest cases, the eruption becomes petechial. *Each spot*, instead of disappearing, is fixed under pressure; and dissection shows an effusion, under the cuticle, of blood, the gradual absorption of which gives rise to the changes in the colour of the eruption from purplish to brownish red, and then to yellowish brown. These petechiae have a more angular form than the ordinary eruption. The eruption is usually most abundant on the chest, back, and abdomen; more sparing on the legs and arms; rarely seen on the face, hands, and feet.

Almost every case of fever is accompanied by some degree of bronchitis; 5-15ths of the whole had increased bronchial secretion, and 1-6th great engorgement, at least of the lungs. Of 65 cases, the fauces were inflamed in 49; a peculiar vesicular eruption was observed in 20 cases.

There is a peculiar faint and vaucous respiration in many cases, depending on pulmonary engorgement and imperfect admission of air to the lungs; in cause and character it strikingly resembles the modification of the respiratory murmur heard on the earliest effort at breathing of the new-born child.

With regard to the *pulse* and *respiration* there are some curious results. The average pulse of the 36 cases, observed daily, and including 415 observations, was 108.5; the numerical frequency of the respiration, 30.5. Both are more frequent in women than in men,—in the former 114 and 34, in the latter 103 and 27, respectively. The pulse and respiration are more frequent in cases with chest complication than in those of simple fever; and the difference is greater in women; and is also, both in males and females, proportionally greater than in the pulse, in the ratio of more than 7 to 1.

But not only does this ratio vary with the nature of the disease; in *uncomplicated* cases the respiration is *proportionally* less frequent as the pulse quickens:—

The results of all the observations are given in the following Table:—

	No. of Cases.	No. of Obser.	Sum of Pulses.	Sum of Resp.	Aver. Pulse.	Aver. Resp.	Ratio. of R. to P.	
Non. Com.	19	209	21,320	5,039	102	24	1 : 4.23	Male.
Complica.	10	95	2,583	9,780	103	27	3.79	
Non-Com.	17	206	22,947	5,857	111	28	3.91	Female.
Complica.	8	107	12,250	3,696	114	34	3.31	
Non-Com.	36	415	44,267	10,896	106.5	26	4.07	Total.
Complica.	18	202	14,833	13,476	108.5	30.5	3.55	

The *urine* very seldom offers anything like a cloud at the period of convalescence—much more frequently in the early days. It has, during the fever, a regular progression in point of density, acidity, and the quantity of uric acid, these being all at first great, and gradually lessening to a minimum, which, in the case of uric acid, is nothing; after which they rise gradually as they fell. The most usual date of the minimum is from the 9th to the 11th, or more particularly on the 9th and 10th days. It remains to be seen whether this minimum coincides with any change in the symptoms. Out of 12 cases there was, on the day of the minimum, an aggravation of symptoms in one, no change in two, and an amendment in nine cases.

Date of Convalescence or Death.—Of the periods of five days, that in which most cases convalesce, is that from the 15th to the 19th inclusive; of those of three days, those from the 16th to the 18th, and from the 19th to the 21st; next to them being that from the 13th to the 15th days. Also, of periods of five days, the most fatal is from the 13th to the 17th; the next, that from the 8th to the 12th. Of periods of three days, that from the 11th to the 13th is most fatal, and is followed by those from the 14th to the 16th, and from the 8th to the 10th.

Of the periods of five days, therefore, that most fatal is also that in which most patients convalesce.

The Morbid Anatomy. Head. The *arachnoid*, lining the dura-mater, is frequently reddened in dots and minute parallel striæ, as we find on the peritoneum and on false membranes. The veins external to the *spinal sheath* are frequently engorged, and are seen crossing the sheath in the way figured by Breschet.

There seems no constant relation between the state of the pia-mater and of the brain. Hence, congestion and effusion into the pia-mater occur in about the same number of cases; redness of the arachnoid lining the dura-mater, is generally coincident with effusion into the upper part of the serous cavity, which occurs in only half the number of cases in which effusion at the base does. This effusion *in* the arachnoid, on the surface of the brain, is not so rare as has been asserted, since it was found in 21 out of 52 cases. Of the same cases, 48 presented effusion into the lateral ventricles, and 35 subarachnoid congestion of their surface; there was effusion into their fifth ventricle in two, into the fourth in 17 cases. The substance of the spinal cord was in all cases natural. On comparing the lesions with the symptoms, there was obtained an unexpected result, viz. of the cases with marked delirium or stupor, a smaller proportion had effusion into the arachnoid or pia-mater, than of those who had during life no delirium. In the same way, we find that a smaller proportion of the cases with marked pia-matral effusion had marked delirium, than of those with little or no effusion. Lastly, of the cases with arachnoid effusion, we still find that those with much effusion had the smallest number of delirious cases, although that proportion was greater in those with moderate than in those with no effusion. [These results are extraordinary, but agree with the observations of Professor Reid, as detailed in a late number (Aug. 1842) of this Journal.] In nearly all the cases, however, where death was preceded by *sudden* stupor, lesion of the brain, or its envelopes, was detected, viz. congestion, bloody effusion, or inflammation.

Thorax.—In 249 cases, there was hepatization of the lungs in 44. Troublesome cough occurred in less than half the cases of hepatization, and the sputum was bloody only in one case. The cough and expectoration, therefore, afford some aid in detecting pulmonary lesion; but the stethoscope must be chiefly relied on. And a useful means of diagnosis is the *frequency of the respiration*, as compared with that of the pulse, which has been shown to be much greater in cases complicated with chest disease than in those which are not. In 54 cases, where pneumonia did not exist, we have the lungs,

Healthy,	8
Congested,	33
Œdematous,	3
Flabby,	5
Red,	3
Full of Miliary Granules,	2
	54

The frequent coincidence of congestion of the brain with that of the lungs is remarkable: Great congestion of the pia-mater occurred in above half the cases of hepatization; in less than half those of great congestion; and in about one-fifth only of those in which the lungs were scarcely or not at all con-

gested. In 52 inspections the heart was found flabby and soft in 7; as to its contents:

	Right Side.	Left.	Both.
Empty,	0	6	3
Coagula alone,	5	2	5
Fluid blood alone,	2	9	3
Fibrinous dots,	16	18	11

Abdomen.—Moderate softening of the mucous membrane of the stomach occurs with equal frequency at the cardia and pylorus, but a pulpy state of the membrane is much more frequently found at the former; and both degrees would seem, from the last Table, to be most commonly found after the lapse of thirty hours after death. A red colour accompanied the softening in nearly one-half the cases in which it occurred. The softening is most frequently accompanied by thinning of the membrane at the cardia, by thickening at the pylorus. The membrane is of natural thickness in one-half the cases in which the cardiac, in three-fourths of those in which the pyloric part is softened. Submucous congestion is most frequent at the cardiac, follicularity at the pyloric region.

With regard to Peyer's glands, their prominence is often found merely by the swelling of the villi; in other cases there is thickening of the cellular tissue with induration and increased vascularity. In this manner the gland may project a couple of lines—an appearance which became rather frequent, from what cause I cannot tell, during the winter of 1838–9, having previously been very rare. A gland so elevated may also become ulcerated; that complication beginning by a deposit of a white matter in one of the follicles, the roof of which ulcerates, the cavity becoming the nucleus of a small round ulcer, which spreads gradually and irregularly, but never reaches a great size, nor does it become inflamed or sloughy, but rather slowly eats away the surrounding thickened cellular tissue. The rapidly swelling ulcer, on the other hand, begins without previous elevation of the gland, and more generally in a solitary than in an aggregate one: a tendency to rapid spreading, and to inflammatory action, are its characteristics; it frequently exposes the muscular tissue or perforates the gut, and is surrounded by a margin which is well defined, whether it be red and angry, or pale and indurated, or elevated, rugged, and everted, or undermined.

Engorgement of the submucous veins was most frequent in the lower half of the jejunum, and upper two-thirds of the ileum; injection of the mucous membrane itself in the lowest third of the ileum.

In 10 cases, the Peyer's glands were injected with blood, and usually surrounded by radiating vessels; in 5 cases, ulcerated.

The vascularity of the Peyer's glands was in only about half the cases coincident with much congestion or softening of the mucous membrane; and ulceration of the same follicles was as little an index to an inflamed or softened state of that tissue.

In the large intestine, congestion, both mucous and submucous, is most frequent in the cæcum; next to the cæcum, come the ascending colon and the rectum for submucous; while mucous congestion is found in the colon and rectum in nearly equal frequency.

The following is a general view of the lesions of the gastro-intestinal mucous membrane in 74 cases:—

	Soft.	Follicular.	Peyer's Glands.	Solitary Glands.	Brunner's Glands.	Ulcers.
Stomach,	57	21	0	0	0	0
Duodenum,	18	0	1	2	4	0
Jejunum,	38	0	62	4	0	0
Ileum,	45	0	68	26	0	0
Cæcum,	45	0	0	11	0	5
Colon,	38	0	0	27	0	4
Rectum,	21	0	0	10	0	1

On comparing the state of the stomach with that of the tongue, the only conclusion which would appear legitimately deducible is, that a brown or blackish dry tongue is frequently indicative of a reddened and softened state of the gastric mucous membrane.

In proportion to the number of cases, lobular congestion of the liver coincides most frequently with bile of a dark and thin, and of a light and thick character; while, with interlobular congestion coincides most frequently dark and thick, or light and thin bile.

The spleen was natural in less than one-tenth of the cases inspected. The most frequent lesion is softness, and next to it, alteration in size; that of colour is the most rare, occurring in a little more than 1-12th; while change in consistence is found in nearly two-thirds of the whole number of cases. Large size, dark colour, and softness, coincide most frequently; as, on the other hand, small size coincides with firmness and a pale colour.

On reviewing the complications and sequelæ of 2352 cases, it would appear that the most common are the following, arranged in the order of frequency:—

Erysipelas.	Inflammation of Fauces.
Pneumonia.	Hemorrhages.
Inflammation of Glands (Salivary).	Abscesses.
Sloughing.	Otitis.
Laryngitis.	Glossitis.
Pleuropneumonia.	Peritonitis.
Affection of Intestinal Glands.	Intestine Ulceration.

One of the most troublesome complications of fever is laryngitis in its various forms; the operation for œdema glottidis was performed fifteen times, and only thrice with success. For this formidable disease, when uncomplicated, and not neglected too long, the easy and effectual remedy is, a vertical division of the cricothyroid membrane, *and of the cricoid cartilage*, the opening to be kept patent by a bent wire in preference to a tube. If the opening be not free, or if it be too long delayed, pulmonary and cerebral congestion will render success very doubtful; if there be inflammation of the mucous surfaces and glands around, the operation is of very doubtful propriety. Erysipelas, abscess behind the pharynx, and vesicular inflammation of the fauces, are frequent and formidable complications of this disease. The œdema is sometimes confined to one side; in which case the patient generally lies on the affected side, to prevent the flap of mucous membrane from falling into the glottis.

Hiccup seems always, or almost always, the indication of some serious visceral disease; and the same remark may be made of jaundice in fever, there being this difference, however, that hiccup is generally observed during the fever, jaundice on the supervention of some complication.—*Abridged from a valuable pamphlet by Dr Anderson, published at Glasgow in* 1840, *entitled*, 'OBSERVATIONS ON TYPHUS."

MATERIA MEDICA AND CHEMISTRY.

ON THE EXTERNAL APPLICATION OF CROTON OIL. BY M. BOUCHARDAT.

M. B. recommends a plaster, used by Chomel at the Hôtel Dieu; and which is thus prepared:—

Four parts of diachylon plaster are melted at a very gentle heat, and while it is half liquid, one part of croton oil is mixed with it, and the mixture is

then spread in a thick layer on calico. Pieces cut from this may be applied to the skin like ordinary sticking-plaster. They quickly produce an active irritation.—*Bul. Gén. de Thérap.*, March 1842.

Process for Analyzing the Blood, followed by MM. Andral and Gavarret.

The Journal de Chimie Médicale gives the following account of the process followed by MM. Andral and Gavarret in analyzing the blood. M. Andral's observations on the physical alterations of the blood and animal fluids in disease, will be found in some recent numbers of the Provincial Medical and Surgical Journal.

Process of Analysis. The blood is received into two capsules of equal capacity, each of which is capable of containing 180 grammes of water. In one of the two capsules we receive the first and fourth fourth-parts of the bleeding, and leave this portion at rest to permit it to coagulate.

In the other capsule we receive the second and third fourth-parts of the bleeding, and immediately agitate this second portion to obtain the fibrine, which is to be washed with care.

The two portions of blood thus obtained ought to have the same composition, whatever influence the flow of blood may have in altering the qualities of that which is discharged.

When the coagulation is completed, we separate with care the serum from the clot, and dry, 1st, The fibrine which had been obtained by agitating one-half of the bleeding; 2d, The serum; 3d, The clot.

The dried fibrine being weighed, gives us the proportion of fibrine in the quantity of the clot operated on. By weighing the serum, after complete desiccation, we learn the proportions of water and solid matters which it contained.

We now weigh the dried clot. The quantity of water which it contained, indicated by the loss of weight sustained in desiccation, permits us to calculate the proportion of solid matters of the serum, contained in the dried clot. In now subtracting from the dried clot, the weight of the fibrine, added to the weight of solid matters of the serum, as estimated by calculation, the remainder gives the weight of globules which the clot contained.

This series of operations indicates thus: 1st, The weight of fibrine; 2d, The weight of globules; 3d, The weight of solid matters of the serum; 4th, The weight of water.

If we wish to separate the organic from the inorganic matters of the serum, after having completely dried this fluid, we weigh the residue, to estimate the total solid matters, and then carefully ignite it in a platina crucible. The white mass which remains at the bottom of the crucible represents the inorganic constituents.—*Journal de Chimie Médicale, May* 1841.

Indian Preventive of Dry Rot. By Joseph Smith.

At Yaynankhyvin, on the banks of the Irrawaddy, are the celebrated Petroleum-wells, which supply the kingdom of Burmah and the adjacent countries as far south as Junk-Ceylon, with *lamp-oil*. The priests whose religious works are all written upon the leaf of the talipot-palm (*Corypha umbraculifera*,) smear the surface with this mineral oil, for the double purpose of filling the interstices with a dark matter which shall render the letters visible, and in order to protect them from the attacks of insects and the ravages of time. I have seen such books of various ages, from 50 to 150 years, whose antiquity could be verified without difficulty—their preservation having been attributed solely to the indestructible properties of the Pe-

troleum in which they had been soaked. Having mentioned these facts, it only remains for me to draw the attention of scientific persons to them, with the view of testing the qualities of Yaynan, as a *preventive to dry rot in timber*. The experiment may be tried without much expense, by saturating some planks with this liquid, and giving them a fair trial with other not so protected; there cannot be the same objection made to this mineral production as there is to arsenic or corrosive sublimate, inasmuch as the Yaynan is not only perfectly innoxious, but has rather an agreeable odour.—*Indian News, 25th July.*

DETECTION OF SUGAR AND ALBUMEN IN THE URINE. BY M. BIOT.

An ingenious and simple apparatus has been devised by M. Biot for detecting sugar in diabetic urine upon optical principles. The method consists in ascertaining the action of the fluid suspected to contain sugar, on polarized light; and we are assured, that in this manner, the smallest quantity of sugar may be instantly detected in the urine of a diabetic patient, and the progress of the disease, and the effect of treatment, thus ascertained with the utmost facility. The same principle may be applied to the detection of albumen, the action on the polarized ray being, in this case, in a contrary direction; and M. Donné proposes also to determine, by the instrument of M. Biot, animal matters, not albuminous, from the *negative* results afforded.

PART FOURTH.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

July 6th. DR MACLAGAN, *President, in the Chair.*

1. *Contributions towards an estimate of the real value of Creasote as a therapeutic agent. By Dr Cormack.*—Dr Cormack's paper consisted chiefly of an abstract of cases in which he had employed creasote. He said, that some years ago, when creasote was a new remedy, its virtues were much heard of, and the medical journals then abounded with narratives of the alleged cures by it, of almost every disease. As a natural consequence of such exaggerated statements, creasote became much less employed by practitioners than it deserved; and than would have been the case, had the first observers of its therapeutic powers, praised it with less enthusiasm, and more discrimination. Since 1836, when Dr C. published his "*Treatise on the Chemical, Physiological, and Medicinal Properties of Creasote*," he has made it, uncombined with any other active substance, the subject of very numerous trials in different diseases, with various degrees of success.

NATURE OF ITS ACTION.—Dr C. has satisfied himself, by experiments on the lower animals, that creasote, in large doses, is a narcotico-acrid poison; and that it resembles prussic acid in its sudden depressing action on the heart, as well as in the temporary nature of its toxicological operation. In medicinal doses, it is almost immediately sedative and calming; but these effects are of short duration; *so that it is a drug which requires to be given in often-repeated small doses.*

I. INTERNAL ADMINISTRATION.—*Use in nausea and vomiting.*—Creasote is one of the best medicines which we possess for stopping vomiting. In the vomiting of pregnancy, an affection so distressing to the patient, it seldom fails. If the sickness come on regularly after rising in the morning, Dr C. prescribes two or three drops to be taken five or ten minutes before getting out of bed. This generally proves effectual; but if it does

not, the patient ought to be directed to repeat the dose in two hours. In more troublesome cases, when the sickness occurs at intervals during the day, one or two drops should be given every two, three, or four hours. Dr C. has ordered it in a great many cases of this kind; but as it is only recently that he has kept accurate memoranda of them, he only communicated the result of his last eleven cases. Nine were completely relieved; one, (a dispensary patient), was lost sight of, but supposed to be relieved; and another was in no degree improved. She was afterwards successfully treated by two drop doses of the medicinal prussic acid. We subjoin some of Dr C.'s cases, and others which he mentioned.

Case I.—The patient was a woman about forty years of age, in the family way for the thirteenth time, and who had during her three previous pregnancies been troubled with fits of vomiting, occurring generally at regular periods, two or three times a-day; and she stated that on the three last occasions, she had miscarried. She was ordered three drops thrice a-day. She took the first dose about an hour before her usual attack, and from that time till her confinement never vomited, and rapidly improved in health. During the first day on which she took the medicine, she had slight nausea; but that also was cured in the course of a few days, by persevering in the creasote, without increasing the dose.

Case II.—A. B., about the third month of her first pregnancy, applied at the Royal Dispensary for a sprain of the wrist. She complained of morning sickness, with severe vomiting, and disinclination to eat for several hours after rising. The nausea and vomiting always commenced immediately upon her leaving bed. Dr C. ordered her to take three drops of creasote in a little mucilage twenty minutes before rising. She did this for three mornings with partial relief, and on the fourth, when by his desire she took a dose of six drops, she had no vomiting, and very little nausea. When the quantity prescribed was finished, she ceased to take it, and the vomiting returned to a certain extent, but never with such severity as to induce her to take any more creasote, to the odour and taste of which she had a great dislike.

Case III.—A very delicate young woman, at an early period of her third pregnancy, applied for something to relieve attacks of nausea and vomiting, with which she was greatly troubled, especially in the morning. She was at first ordered two, then three, and four drops, thrice a-day, but without the least advantage. Dr C. then prescribed hydrocyanic acid, which he now regrets, as the probability is, that a larger dose of creasote would have proved efficacious.

Case IV.—Professor Simpson informs Dr C., that he finds creasote a most excellent remedy in the sickness dependant on pregnancy. He states, however, that in an aggravated case of this kind which recently came under his care, he found it and several other reputed remedies quite useless. The desired result was at last obtained from doses of the acetate of lead.

As illustrating the necessity of giving a larger dose when a smaller has proved insufficient, the following case, communicated to Dr C. in November 1836 by Dr Fowles, is subjoined:—

Case V.—Agnes B., aged 17, resident in Cupar-Fife, about the fifth month of her pregnancy, was annoyed by vomiting coming on rapidly every morning, about eight or nine o'clock. Six weeks after this commenced, when she was first seen by Dr Fowles, she stated that she had taken much bark, both in the solid and liquid forms, and latterly some doses of prussic acid, without deriving from either, the least advantage. He ordered her one drop of creasote three times a-day. Next day, this dose was doubled, and on the following, was increased to three drops. There was a decided improvement on the first and second days, and on the third she had no vomiting, but on the fourth and fifth it returned to some extent. After this, however, it did not recur, but up to the eighth day she continued to experience squeamishness at the accustomed hour. Had Dr Fowles used larger doses at first, the probability is, that the action of the remedy would have been more strikingly manifested.

The sickness and vomiting following a drinking debauch Dr C. saw speedily relieved, in two instances, by one dose of four drops. In January 1837 Mr Waugh, (then surgeon and apothecary in the High Street of Edinburgh), told him, that he had relieved several individuals in a similar state, by small doses of creasote; but that in others he had tried it without any good effect.

In sea-sickness, Dr C. had only one opportunity of seeing its effects. Case.—Last

summer, when going up from Edinburgh to London by sea, he observed when getting under way, a gentleman leaning over the side of the ship very sick, beside whom was a bottle smelling strongly of creasote. It turned out, that he was a great martyr to sea-sickness, and had been advised by an apothecary, to whom he had applied for some remedy to be provided with, to take the creasote mixture which attracted Dr C.'s attention; but that it had had an effect directly the opposite of what was intended; for no sooner did he swallow the first dose, than he was seized with retching. Upon the following day the weather was rough, and the creasote gentleman became exceedingly sick. In desperation he applied again to the reputed specific, when the very same dose that had on the previous day made him squeamish and sick, on this trial almost entirely relieved him. The quantity of creasote contained in his mixture was not ascertained. *It is well worthy of notice, as a general remark, that creasote, though excellent in allaying vomiting, often excites it when it does not exist.* Vomiting is caused by creasote very frequently in cases where the dose is too large for the individual. If the statements of many can be relied on, it seems worthy of trial as a remedy in sea-sickness.

In *vomiting connected with hysteria*, creasote proves a very valuable remedy, and so far as Dr C.'s experience goes, he is inclined to think, that Dr Elliotson and others, who have recommended it very strongly in this class of cases, have not done so without sufficient cause. In at least ten cases of this kind, Dr C. has tried it in doses varying from two to eight drops, and in all, excepting one, it proved an admirable medicine, not only relieving the vomiting, but also apparently, in most instances, calming the nervous excitability. In the case in which it apparently did no good, the dose could not be increased beyond six drops thrice a-day, on account of the vertigo which it occasioned. The patient was ultimately much benefited by sponging with cold water, and taking four grains of the saccharine carbonate of iron three times a-day. Case.—Patient—A young woman, exhibiting many of the anomalous symptoms so common in hysteria. When first visited, she was emaciated, weak, nervous to a distressing degree: stated that she vomited her food, and had done so for ten days, but had had sickness in the mornings for a much longer period. She had been trying various tonics. None of them did her any good, and they were generally rejected soon after they were swallowed. Dr C. ordered her to breakfast in bed, and that sparingly, on the morning following his visit, and half an hour before doing so, to take a dose of a mixture, containing three drops of creasote, in acetic acid. After her meal, she had only slight nausea. She sponged her chest with vinegar and water, and before a light dinner, repeated the dose, but had a good deal of vomiting, though not so much as usual. As the creasote had produced no giddiness nor uneasiness of any kind, the quantity was increased on the following day to five drops before breakfast and dinner. For a week after this, she had neither nausea nor vomiting; but both having then slightly returned, for five days the dose was increased daily a drop, till at last, she was taking ten drops twice a-day. From this time the vomiting did not return for three weeks, during which time she persevered in the medicine, and under its use, daily gained strength and flesh; the catamenia, which had formerly been scanty, became much more abundant. As she now complained of headach, and attributed it to the creasote, it was discontinued, and the saccharine carbonate of iron substituted, in doses of four, and afterwards five grains, three times a-day, in pills made up with the extract of gentian. She continues to use the iron, and has latterly, with great benefit, taken the shower-bath. Once or twice the vomiting has returned, and been promptly relieved by the creasote. In this case, the creasote did more probably, than relieve the vomiting. It is, however, proper to state, that along with the creasote, from the commencement of the treatment, great attention was paid to the bowels, which had formerly been neglected. She took the compound aloes and assafetida pill so as to have at least one stool daily, whereas formerly, she rested satisfied with two, or even with one a week; this of itself must have greatly contributed to the cure.

In all of the hysteric cases of vomiting, there existed constipation, which was actively dealt with; but as in the case now detailed, the vomiting was relieved by the creasote, before the purgative treatment could have developed its effects. From a number of cases, creasote appears to be valuable in hysteria, not only for the vomiting, but also in assisting to controul many of the fantastic and distressing symptoms of this Protean malady.

In vomiting from various causes not yet specified. creasote may be used with great benefit. In about twenty or thirty such cases Dr C. has tried it with advantage. Of thirteen cases he has kept notes. Seven of these were phthisical. Relief was afforded in five of them. In the other two, it seemed to do no good whatever. In one of the seven successful cases, after morphia, strong coffee and other things which used to succeed with the patient had failed, a dose of three drops stopped the retching in as many minutes. In three of the thirteen cases it was given to stop vomiting, caused by taking croton oil in neuralgia, and in every instance succeeded, though in one of the instances fifteen drops were required to be taken within half an hour. This is the largest quantity of creasote which Dr C. administered within so short a time. In two of the thirteen cases, the patients were lost sight of; but the affections were supposed to be hysteria, or pregnancy. The result of the first dose was good. One of the cases may be briefly detailed. Case.—A. E., a boy about ten years of age, was under treatmenf for tape worm, and had vomited one two days before he was seen. During that and the preceding day, he had very severe vomiting, and had been unable to take either food or medicine. At the time of the first visit, he had retching every ten minutes. Creasote fortunately being at hand, one drop was immediately administered in a little mucilage. This did some good. The dose was repeated in ten minutes, and during the following hour he had neither vomiting nor retching; but at the end of this period, there being a return of the symptoms, a third dose was given. After this, they did not recur during the following eight days that the patient was under observation. Dr C. saw this case along with Dr David Macfarlane, now at Drymen. Case.—The following case, which has been communicated by Professor Simpson, may be mentioned in this place. Some years ago he operated on a man at Falkirk for strangulated hernia. Great vomiting ensued, which did not yield to opium, though given in large doses, and a mustard blister was also applied over the stomach, without any good effect. One dose of two drops of creasote completely relieved the sickness and vomiting.

Combining creasote with drugs which have a tendency to produce nausea, Dr C. finds often answers very well, as many cases in the journals led him to expect. He has twice given it in combination with, in one case four, and in another six grains of sulphate of copper, as an astringent. In neither, was there sickness. Of course it is impossible to say with certainty, that this immunity from nausea was owing to the creasote.

When laid up with influenza about three years ago, Dr C. was taking a mixture containing tartar emetic, which produced considerable nausea and vomiting, which induced him to embrace the opportunity of observing the effect of creasote in such circumstances. He took two or three drops, which speedily checked the retching. After resting about an hour, he resumed the mixture, which again produced its emetic effect, and this was again arrested by a similar dose. He afterwards took occasion to repeat this observation on two patients. Case.—The first was a young girl labouring under a bronchitic affection. He prescribed the tartar emetic solution in the morning, and returned some hours afterwards, when he found her very sick, and when he was beside her she vomited a little. She was directed to go on with the solution[1] every hour as formerly, and immediately after each dose to take two drops of creasote. In the course of the next two hours, she had taken a grain of tartar emetic and eight drops of creasote, without the nausea continuing or returning. As her face was flushed, and she complained a good deal of frontal headach, the creasote was discontinued. Unfortunately the pulse was not counted before the experiment; but Dr C.'s distinct impression at the time was, that it was then stronger and fuller than afterwards. Case.—In the other case, a grain of tartar emetic was dissolved in water, and the patient, a stout young man, ordered to take a table-spoonful every half hour, till he vomited. After taking half of the mixture, violent vomiting and retching came on, when he took three drops of creasote. This only moderated the symptoms; after five minutes, three drops more were administered, which completely stopped the vomiting. The paucity of his observations, Dr C. stated, did not entitle him to advance any suggestions as to the application of these cases to therapeutics; but he thought that they are at least sufficient to show, that creasote can controul

[1] Each dose contained a quarter of a grain of the tartrate of antimony.

the operation of tartar emetic. As opportunities occur, he intends to prosecute this branch of the subject.

In *Neuralgia*, creasote has, in the opinion of many, been found useful; and from a knowledge of the sedative properties of the substance, along with some experience of it in this class of diseases, Dr C. can easily believe that it may prove beneficial. The nine cases in which he has employed it, lose almost entirely their value as experimental provings of its curative powers of neuralgia, inasmuch as he had in them all purged the patient steadily, and sometimes very actively, with croton oil, generally employing the creasote simply as a palliative during the paroxysms, just as at other times we prescribe henbane, the muriate of morphia, and aconite. Here it is proper to speak guardedly; but from all Dr C. has seen and read, he thinks it may turn out to be a good medicine to use under certain circumstances in neuralgia. Creasote plasters have of late been recommended in the journals; and a tar plaster is a favourite remedy for tic among sailors. The unquestionable relief from pain which creasote gives in toothache, is also a strong reason for making trial of it as an outward application in the different forms of neuralgia. When an opportunity offers, he intends to try the effect of creasote plasters along the course of the affected nerves.

In *Phthisis*, some have maintained that creasote is quite a specific remedy, having the power of dissolving tubercle, and cicatrizing cavities in the lungs; but which of the drugs in our voluminous catalogue of materia medica have not in their turn been celebrated as all-potent in conquering what, we fear, must yet be called this *invincible* disease!

It has already been said, that creasote is useful in checking the vomiting of the latter stages of consumption; and when it is added, that its vapour sometimes produces a soothing effect, and makes the expectoration more easy, all that can be truly advanced of its uses in this disease has been stated. The vapour may be inhaled in the steam of hot water, placing the vessel under the mouth of the patient; or if this cannot be borne, the air of the apartment may easily be sufficiently saturated with the vapour, by allowing the steam of creasote water to escape for a certain time.

II. CREASOTE AS AN EXTERNAL APPLICATION.—In *toothache*, creasote generally gives immediate relief from pain, when properly applied to the exposed nerve, in the cavity of a carious tooth. Dr C. has in his own person made repeated trials of it, and is quite convinced, that though it gave respite from pain, it hastened the destruction of the teeth. This observation has been repeatedly made by others.

In *arresting hemorrhage* from small vessels, or the oozing of blood from abraded or cut surfaces, bleeding ulcers, and leech bites, a creasote ointment or lotion is very often effectual. It acts by coagulating albumen, and thus forming a crust. Pure creasote may be tried when the bleeding is more profuse. In the hospital at Cadiz Dr C. saw it used with complete success, in the oozing of blood from the wound of a compound fracture. He never had an opportunity of seeing its power over pretty active hemorrhage, in the human subject, except in this case.

From experiments made on dogs and rabbits he is, however, quite satisfied that creasote possesses, in a high degree, the power of arresting hemorrhage from the capillaries; but in wounds, which it is desirable should unite by the first intention, its use should probably be abandoned as soon as the bleeding is fairly subdued, as, by uniting with the lymph effused, it forms a substance, which would act as injuriously to the progress of the reparative process, as any other foreign body.

In *chronic venereal ulcers*, Dr C. has repeatedly used creasote with great advantage. It answers very well to apply it pure *once*, when there is great deficiency of action, and subsequently to employ an ointment of from four drops to thirty, to the ounce of lard. The lotion is also a very excellent form of application. In *phagedenic ulcers*, *ulcerated chilblains*, and sores yielding a sanious discharge, Dr C. has often used creasote with great benefit.

In the application of creasote to ulcers and other solutions of continuity, there are several facts which the practitioner should bear in mind. *It is important to remember that water only dissolves one eightieth part.* If an excess of creasote be present, it will float on the surface in small globules, and can therefore very easily be removed; but if this is not done, when the lint is dipped in the lotion, these globules will adhere, and in this way, a very different wash from what was intended, is placed upon the sore. In very few cases, where the raw surface is extensive, pure creasote ought to be applied to the whole of it, as severe irritation is generally the result. More or

less inflammation, almost in every case, follows the application of the pure drug to a raw surface: it continues, according to circumstances, from a few hours to several days, and there are instances in which a poultice is quite necessary. At the beginning of the treatment, creasote, either pure or in the form of lotion, should be more copiously applied than afterwards; and as soon as a healthy granulating surface appears it may with advantage be altogether discontinued, and some of the common lotions of the metallic salts substituted. When the ointment is applied to an irritable sore, it answers very well to put a poultice above it. To chancres, creasote ought to be applied with a camels' hair pencil. One or two applications are frequently sufficient, and more may do harm.

In a case of condylomata Dr C. found creasote useful; and in correcting the fetor of vaginal discharges he has also several times been assured by his patients that it proved successful, but as a *remedy* for the running it is very inferior to lotions of sulphate of copper, and sulphate of zinc, and the other common washes. He draws these conclusions partly from cases which he saw treated in the Lock Hospital of Edinburgh some years ago.

In narrating the result of most of the trials which he had made with creasote, the author stated that he offered them, not as in themselves of much value, but merely as a contribution towards a proving of its real therapeutic value. In some other diseases in which he used it, it did no good, and in some evil; but as these were maladies to which he had not adverted, it was better to defer a statement regarding them. They were cases of diabetes, dyspepsia, rheumatism, irritable bladder, and cancer. Its effects in these cases, and in skin diseases, may, at a future time, be brought before the society.

Professor Graham stated that he had employed creasote frequently in the Infirmary, as a cure for vomiting. He first gave prussic acid, and if that failed, the creasote was almost certain to succeed. He seldom met with a case in which both remedies proved unsuccessful.

Dr Hay spoke in terms of commendation of the creasote mixture of the Edinburgh Pharmacopœia, in which the taste of the drug is much obviated by the combination with spirit of juniper.

The President thought that the observation of Dr Cormack was important, viz, that from creasote floating on the top of a mixture, from its sparing solubility in water, a much stronger dose was often taken, than intended. This might be a cause of its sometimes unexpectedly producing nausea and headache—and inflammation when applied externally. The mixture, before being used, should therefore be well shaken, and made with such a quantity of creasote as was soluble in it.

2. *Professor Graham wished to call the attention of the society to the allocation of fever patients in the Royal Infirmary.* He was inclined to believe, that the congregating of this class of patients in particular wards was mischievous, and that their diffusion through the ordinary medical wards, under certain precautionary rules, would be not only safe, but beneficial. The danger resulting from the present system could be shown by the fact of his being unable to recollect a single instance of a gentleman entering as clerk into a fever hospital, escaping without an attack of the disease, and some of his best assistants had thus become victims. The nurses also in fever wards were much more frequently attacked with fever, than those in the other wards. That he had often been able to trace attacks of fever caused by persons having visited their friends while patients in a fever ward; and he stated, though with less confidence, that the accumulation of fever patients in particular wards would be found to render the disease more severe, and the contagious miasmata more intense. He stated a second proposition, viz., that the diffusion of fever patients through the ordinary wards, under certain precautionary stipulations, would be safe and beneficial. This he endeavoured to prove by the fact, that he had done it often during many years in this hospital, and never saw the disease propagated, except in one instance, to an individual who, on one of the precautionary measures which he considered essential, had been neglected by himself. Dr G. stated farther, that it was the practice of the London hospitals, that there were there no particular wards set apart for fever patients, but they were diffused among the cases of ordinary disease. He thought that the explanation of the danger on the one hand, and safety on the

other, depends upon a certain degree of concentration in contagious matter being necessary for its efficiency; that this concentration never took place to a dangerous extent, when no more than four fever patients were placed in one of the larger wards of the Edinburgh hospital, and when the fever beds were placed as much apart as possible, without having any of them, along with the bed of an ordinary patient between two of the windows; that it was an established fact, that common fever was constantly propagated in the dirty, ill ventilated, and crowded houses of the poor, but very rarely in the clean, well aired, and large apartments of the rich; that the students attending the hospital likewise frequently caught the disease from attending the fever wards, and especially the clerks, as he had already noticed, many of whom had died.

In corroboration of these statements, the Professor read letters from Dr Richard Bright and Dr Charles Williams of London, to whom he had written, not stating his own opinion, but requesting theirs, for a specific purpose relative to the management of the hospital.

[This deeply important subject has, we understand, been submitted to the managers of the hospital, and by them remitted to their medical colleagues.]

The President remarked that it was of great importance that some plan should be devised to counteract the spread of the disease, but he had his doubts as to whether Dr Graham's suggestions would have the effect; and if cases of infection did occur under his *improved* system, he feared the public might take alarm.

Dr Gardner agreed with Dr Graham in the necessity of dilution and ventilation, and mentioned facts illustrative of the necessity thereof.

3. *Valedictory Address.*—This being the last meeting of the session, the President said that he had again to congratulate the members on the success which had attended it. In no former session had there been a greater variety of interesting communications, including the results of practical experience, as well as of speculative inquiry, enriched also by original views, both of natural and morbid anatomy,—and of the minute structure in both, which the power of the microscope in the hand and which the eyes of skilful observers had unfolded. He adverted also with satisfaction to the annual statistical report by the medical officers of the New Town Dispensary, and trusted that their example would be followed by other medical institutions. He reminded the members, as had been suggested by the first council of the society, that many useful and important conclusions regarding the history and treatment of diseases may be drawn from a collection and comparison of the records of different medical charities, specifying the diseases treated, and deaths from each disease at different times and in different situations, with the ages of patients and seasons of the year,—and extended the suggestion to corresponding members to communicate notices of the medical topography and habits of the people in their respective districts.

The President thanked the members for their excellent attendance during the session. He felt assured that their conversational discussion on the communications, and on other incidental professional topics, had been no less agreeable than useful, and tended to foster that kindly feeling and confidence which were so essential to the progress of science, and the prosperity of their professional labours.

FRENCH ACADEMY OF MEDICINE.

23d August.

There were no papers of any great interest before the Academy.

30th August.

1. *On the Treatment of Poisoning by Arsenious Acid.*—The following letter was read from M. Orfila:—

Mr President,—At the meeting of the Academy on the 20th October 1840, I read a paper on the treatment of poisoning by arsenious acid, in which I showed the in-

efficacy and danger of the tonic and stimulant method, latterly so much praised by the school of Rasori. The paper was accompanied by a detailed account of 136 experiments, which justified the conclusions drawn by me; some days afterwards, a commission, consisting of MM. Burdin, Dupuis, Ségalas, Bouley, jun., Gérardin, and Bouvier, was appointed by the Academy, to undertake and determine experiments on this subject, whether they were, or were not in favour of the tonic treatment. If my information is correct, from 20 to 22 horses have been poisoned by arsenious acid in presence of the commission, and subjected to the stimulant plan of treatment, all of whom died in a very short time. This result, which agrees with what I have always advanced, is too important not to be made known to those who are still in some doubt about the utility of a mode which cannot bear the slightest examination. I would accordingly solicit, that the commission be requested to give in their report as soon as possible, in order that the truth may be published. I remain, &c. Orfila.

2. *On the Efficacy of Vaccination. By Dr Milon of Sorréze.*—A report on this paper was read by M. Bousquet. The author having had an opportunity of observing an epidemic of small-pox, has made known the results of his practice, as it appeared to him to throw some light on the action of vaccination. The small-pox, he says, was always arrested by vaccination, but notwithstanding, all the vaccinated did not equally participate in that privilege. In those in whom the vaccination was old, cases of varioloïde occurred,—a disease different from small-pox, although having the same origin; both affections may, and do proceed from each other. It has often been remarked, that the effect of vaccination wears out; when the disease is seen afterwards, it is found to be only the varioloïde, and not true small-pox, as this latter, with all its characters, is never met with in those who have been once successfully vaccinated. Vaccination is not a cure for small-pox, as people who have been vaccinated at the commencement of that disease, may nevertheless die of it;—it is, however, a preventive, by substituting itself for the small-pox. M. Milon does not believe in the exhaustion of the vaccine virus. M. Bousquet has done so, from the year 1836, when he saw a second vaccination take effect. Since the introduction of vaccination, population has increased, but there are so many other causes to account for this, that it is difficult to say how much of the increase is really owing to vaccination.

3. *On the Microscopical Characters of the Sputa of Phthisical Patients. By M Sandras.*—The author selected from the Hotel-Dieu, patients in whom phthisis was well marked; after having collected their sputa in a small tube, he submitted them to a microscope of 300 diameters, and he believes that his experiments will confirm the already existing opinion, that the expectoration of consumptive people is quite different from that given off by the lungs in other diseases, and that they show further, that this mode of examination will materially assist the diagnosis of this disease, formed by the stethoscope. He found that the expectoration consisted of numerous round globules, separated from each other, of a greyish-white colour, and similar in size and form to the globules of pus, but differing from them in this respect, that the latter are circumscribed, while the former are surrounded by a kind of rough layer, which it is impossible to remove by washing. They are also opaque in the centre, and become gradually clearer as we approach their border. The above data were drawn from 49 patients; but he observes at the same time, that the sputa of all phthisical subjects do not present a similar appearance,—a circumstance which can be easily accounted for, when we consider that invalids are in general affected at the same time with bronchitis. M. Sandras was unable to discover the globules above described, in tuberculous abscesses in other parts of the body. On examining the expectoration from simple catarrh, it was found to be apparently similar in appearance, having small corpuscles, but no globules; these were not isolated from each other, were not all of a like size, disappeared or only appeared in an indistinct manner under the microscope, and their surface was frequently striated. Notwithstanding these striking differences, cases are occasionally met with, in which it is very difficult to decide whether the disease is phthisis or bronchitis. M. S. does not think that the pus comes from the tubercular matter itself, but from the secretion in the centre of which the tubercle is placed; nevertheless, the signs afforded by it are not of less importance in the diagnosis of the disease.

4. *Case of Typhus Fever in an Old Woman.*—M. Rayer showed a preparation of the morbid degeneration to which the glands of the small intestines are subject in typhus fever, as it occurs in Paris; and he prefaced the remarks on his case by say-

ing, that some years ago, M. Chomel had declared, that he was not aware of a single authentic case of typhus fever having been met with in a person above the age of 55. Since that period, M. Prus had reported an instance of a person 74 years of age, who was affected with that disease; and the individual from whom he obtained the specimens at present on the table, was 50 years of age when attacked.

Supplement to Mr Thomson's Cases of Poisoning with Sulphuric Acid.

(Vide p. 879 of this Number.)

Dr Cormack, *Kilmarnock, Sept.* 20, 1842.

Dear Sir,—A few days after I had transmitted to you my short account of the two cases of poisoning by sulphuric acid, the patient last referred to, applied to me with symptoms of stricture of the œsophagus; and conceiving that a short detail of the symptoms and method of cure, would not only render the case more complete, but also more interesting, I have here subjoined a brief notice of the facts therewith connected. In the hope that it is not too late for the forthcoming number, I am, dear Sir, your most obedient servant, John Thomson.

P.S.—On the 21st August, or about two weeks after I had ceased attendance on this young woman, she again applied to me, complaining of inability to swallow any thing but liquids; and sometimes even these were accomplished with difficulty. With the view of ascertaining whether a stricture did not exist, I attempted to pass a flexible tube down the œsophagus, but its progress was completely arrested immediately behind the cricoid cartilage. Partly in consequence of the firmness of the stricture which was found to exist here, and partly on account of the irritability of the patient, my first effort to pass the tube was rendered abortive, so that I was obliged to withdraw and re-introduce it several times before I succeeded in getting it fairly through. Two days after this she returned, saying, that for the last twelve hours she had been totally unable to swallow any thing whatever. I gave her a tumbler of water, and directed her to swallow a portion of it in my presence. On watching her attentively, I observed the water evidently go farther down than the place where the stricture had been discovered to exist, but before it had time to reach the stomach it was thoroughly and entirely rejected. Having now resolved to pass the tube completely into the stomach, if this should be found practicable, I began by endeavouring cautiously to get it through the stricture, situated, as has already been stated, immediately behind the cricoid cartilage. This was accomplished with much less difficulty than I had experienced on the former occasion, and the tube passed onwards without the slightest interruption until it reached within three or four inches of the stomach. Here it became at once evident that another stricture existed, and apparently of a nature still more unyielding than the first; any attempts to get the tube to pass through, (however cautiously exerted,) excited so much pain and irritation, accompanied with severe retchings, as to put me under the necessity of withdrawing it three several times without accomplishing the object in view. Every time the tube was withdrawn its surface was smeared over with masticated food in a semi-fluid state, which seemed to have been detained in its progress towards the stomach by the stricture. The fourth time the tube was introduced I succeeded, by the exercise of a good deal of force, in pushing it completely through; full vomiting immediately followed its withdrawal, the ejecta consisting of mucus, mixed with about a teaspoonful of blood. Considerable pain was complained of after this for several days in the epigastrium, but eventually subsided without any application being made to it. Though the patient had been unable to swallow water immediately before, she now succeeded with the utmost facility in getting down a piece of dry wheaten bread, after it had undergone an ordinary amount of mastication. For several successive days the patient called every afternoon for the purpose of having the tube passed into the stomach, but on no subsequent occasion was there any amount of difficulty experienced. The greatest resistance that was offered to the passing of the tube, and indeed even this was not very great, was behind the cricoid cartilage. Even this soon began to disappear, and she was directed to call every alternate day. In the course of a short time (all traces of the strictures having, for the time at least, become completely evanescent,) I desired her not to call till the

dysphagia had again returned. After an absence of six days she came to inform me that, during the last few hours, she could scarcely swallow water. The tube was again passed with almost the same ease as before, and though five days have again elapsed she has not yet appeared to make any complaint, so that I have now the fullest confidence I shall ultimately be able to rid her entirely of this annoyance.

Sept. 19. Not having been called upon for the last twelve days, I visited her today at her own house, and was happy to find that, since the last introduction of the tube, she has continued to be able to swallow with great ease. Occasionally, she says, when eating dry food, its progress towards the stomach is temporarily interrupted, but this is easily removed by a mouthful of water. Instead of getting worse, she thinks the difficulty of swallowing is rather diminishing, and, with the exception of a little weakness, is now as well as ever she was. I think it not improbable, however, that she may yet require the use of the tube for two or three times at distant intervals.

INDIA.—MEDICAL BOON.

General Orders by the Honourable the President in Council.

Fort William, 1st July 1842.

No. 169 of 1842.—In obedience to the orders of the Honourable Court of Directors in their military letter to the government of India, No. 6, under date the 4th May 1842,

The following regulations are to have effect in the medical department of the three presidencies from the 6th instant.

The situation of superintending surgeon to be considered as a staff appointment, to which only those fitted for it by a zealous and able discharge of their professional duties shall be deemed eligible, and the appointment to future vacancies will be made without reference to the order of succession, whenever it may be the opinion of government, that such departure from seniority is required for the maintenance of the public interests.

The present system by which all pensions in the medical service superior to that of surgeon (captain's full pay after 17 years' service in India) are dependent on promotion to the staff appointment of superintending surgeon, is abolished, and in its stead, the principle of granting those pensions according to length of service established, upon the following scale, viz.

After 20 years' service, 3 years forlough included, as at present,		L.191 a-year.
„	28	300
„	32	365
„	35	500
„	38	700

The present regulations by which superintending surgeons are entitled as such to retiring pensions of L.300 and L.365 a-year, and members of the medical board to pensions of L.500 and L.700 a-year according to period of service in these ranks respectively, will cease to be the rule of the service for medical officers after the date of the introduction of the new arrangement; but individuals then in the service, and who may be appointed to the offices of superintending surgeon and member of the medical board within ten years from that date, will be allowed the option of retiring upon pensions upon the old scale of length of service in those ranks, instead of the new scale of length of service in India.

The designation of 1st, 2d, and 3d members of the medical board is abolished, and the following titles are substituted.

Physician-General,	1st Member.
Surgeon-General,	2d Member.
Inspector-General of Hospitals,	3d Member.

The members of the *Board* will accordingly be commissioned with these titles when appointed to the respective positions above mentioned, and when retiring from the service will be placed on the retired list with the title then held by them.

The regulation which fixes the rank of brigadier-general as the relative army rank

of members of the medical board will equally apply to those members under the new titles now established.

All surgeons of 30 years' service to be designated "Senior Surgeons," and their relative rank with officers of the army to be that of major. This arrangement, like all others, having reference only to the rank and designation of medical officers—confers no claim whatever to superior allowances, and will make no change whatever in the nature of their employment.

(Signed) W. M. N. STURT, Major,
Offg. Secy. to the Govt. of India, Mily. Dept.

When we saw it insinuated lately in a Calcutta newspaper that the merit of the "medical boon" was due, in some way or other, to Sir John Cam Hobhouse, of whose integrity and liberality as an Indian minister the world has had some experience, and whose opposition had been authoritatively declared by official men to be the sole cause of a "boon" being so long withheld, we felt very nervous about the result, and feared that our medical friends were doomed to a grievous disappointment. And so it has proved. This new piece of legislation is to all intents and purposes a *shabby* measure, and little calculated to relieve the Court of Directors from the sarcastic imputation which was cast on them some years ago, that they ventured to try experiments on the medical department, which they dared not practise elsewhere, simply because they believed it too uninfluential to resist. But we acquit the Honourable Court to a great degree on this occasion, for the "boon" is clearly of an Eastern origin. The Calcutta *clique* did not patronise the medical service, although it favoured some of its members, and when its claims were pressed on Lord Auckland, it is notorious that he replied, that medical officers in India appeared to him to be very well off, when their receipts were contrasted with those of persons of the same profession in England. Poor man! had he, instead of coming out as viceroy of India with L.30,000 a-year, been left to enjoy his moderate patrimonial income of less than L.1000, enlivened in retirement by the convivial pleasantries of his "trusty crony" Sir John Cam, what a different state of affairs might have existed amongst us!

But to examine this "boon." From the first consolidation of the Company's service, it was an acknowledged principle, that a servitude of 22 years should entitle the military officer to his first rate of pension, while one of 17 years should assure to the medical officer the same privilege. This rule was strictly just, inasmuch as it allowed to the latter five years advantage as a compensation for the same extent of time occupied, as well as for the great expense incurred, in his education to fit him for the public service; keeping in view also that while the cadet entered at 16, the assistant surgeon was necessarily precluded from doing so, until he had attained the age of 21. But we search in vain for this equitable principle in the new medical regulations, as they appear in the Calcutta *Government Gazette* of the 1st inst.; and we demand to know why, after having been acknowledged and acted upon for a long succession of years, (since 1796,) it should now be officially set at nought to the injury of the medical department. The primary feature in the "boon" to the army was the abridgment of two years' service, whereby the military officer received his first pension after 20, instead of 22 years; and to have made the new medical regulation fair and just, or entitled to the appellation of a *boon*, it should have commenced by reducing the surgeon's service in a similar proportion from 17 to 15 years, or, allowing what had been the acknowledged relative proportion, to 15½ years. We observe another iniquitous distinction between the military and medical officer, to the utter violation of the principle above alluded to, and in defiance of the recorded pledge of the Court of Directors,—that their medical servants should participate proportionately in all advantages with their military officers. From his first to his second stage of service, the military officer has only to serve *four* years (20 to 24), when he secures the pension of major, or L.292 per annum; but the surgeon has now to serve *eight* years (17 to 25), before he obtains his second rate, which even then amounts only to L.300. This is so manifestly unjust, that we presume some of the clerks at the India House must have left out a line embracing some intermediate period, in the copy of the Court's Despatch which was sent to Bengal. These are not the only objections to the new rate of pensions, but want of space prevents our entering further on the subject. It may be sufficient to say, that the scale is most *illiberal*, when contrasted with the concessions which have been made to the medical branch of H.

M.'s army during the last 15 years, and even with the generosity of the court itself to the Indian navy. Upon what principle also, can it be expected that the medical officer is to serve *twenty-nine* years to obtain the same rate of pension which is granted to a military chaplain after *fifteen* years!!

We believe that the feeling on the subject of this miscalled "*boon*" will be one of unmitigated disappointment, so far as the court's despatch can be understood; for there are some most important points which it leaves altogether in doubt,—as for instance whether the members of the medical board are to remain or not after the completion of five years' service in the board, and whether the board is to be recruited from the surgeon's list, or from the elected superintending surgeons. Then again, how can an *elected* superintending surgeon superintend and control officers who, by virtue of their queen's and company's commissions, are senior to him in rank? If he goes home on furlough, is he to retain his rank, and on his return to India to resume his duties? Before a sweeping and momentous change was made in a service, these things should have been well considered and defined. The regulation, as it stands, will probably suit the objects of some surgeons, eager for promotion, but rather low in the Bengal list; since, by means of the pension on the one hand, and the ungenerous threat of supercession on the other, their seniors may be enticed or scared away; but unless this effect is considered beneficial, no advantage can result from it. It may have served the purposes of Mr Mangles and his friends to represent the old medical servants as less efficient than the seniors in other departments, and to urge the expediency of their removal, but when the Court of Directors lent themselves to so questionable a scheme, they should have been prepared to buy off the old officers with a liberal provision, in the same manner as they lately encouraged the officers of the Indian navy to retire, when they altered the condition of that service. One ground for the alteration has always been, that the Bengal medical officers had been superceded by those of Bombay; and our officers certainly stand relatively much higher in the list: but the reasons are obvious,—the deadly mortality of the provinces of Western India; the greater scarcity of comforts here than in Bengal; and above all, that our officers have paid very largely for their position, and long before their Bengal brethren, had taken the hint, given in such honied terms by the Court of Directors,—that no objection existed to officers contributing to the comforts of their seniors on their retirement.

The medical service claimed a boon which would increase their advantages on retirement in the same ratio as the military boon had benefited the officers of the army. They also claimed a rank corresponding with that of major, and a fair proportion of field officers in accordance with the court's promise of the 5th February 1823, that their service should participate in all advantages in common with the army. That such were their objects and expectations, appears very clearly in the memorials of Drs Kennedy, Burnes, &c., and it is no secret that the Court of Directors, during the chairmanship of Sir James Carnac, favoured their claims, but that they were crushed by the late president of the India Board. Now, the designation "senior surgeon," with the rank, but *without the pay*, of major, after 30 years' service, forms part of the "boon!" Surely, this looks very like an insult to our old and grave members of the faculty. The court lately conferred the rank of major on civilians of *eight* years' standing, and through their kindness, we may soon witness the interesting anomaly of a man taking precedence, in the public service, of his own grandfather, purely because the latter is a doctor! But this and all the other provisions of this crude and undigested "*boon*," require an immediate modification; and we rejoice to think that those now in power are not likely to reject an appeal on the subject. Some years ago it was foretold in this paper that the medical service would only receive its right when Lord Ellenborough was *in*, and Sir John Cam Hobhouse *out*; and we, after the exposition we have made, confidently leave the subject in the hands of our present governor-general.—*From the Bombay Times.*

SURGEONS' HALL, EDINBURGH,

1st August 1842.

e Lammas last the following gentlemen have offered themselves as Candidates Diploma of the Royal College of Surgeons of Edinburgh; and after producing tory evidence that they had completed the Course of Study prescribed by the , have been admitted to examination, and found fully qualified to practise the Anatomy, Surgery, and Pharmacy, and have received Diplomas as Licentiates College accordingly:—

SCOTLAND.

t White, Aberdeenshire.
Jopp, Do.
s Ogilvie, Do.
ıder Cumming, Argyllshire.
ıder Connell MacLaren, Ayrshire.
Hyslop, Do.
m Macdonald, Banffshire.
ıs Broomfield, Berwickshire.
Leslie, Do.
Hutton, Do.
J. Martin, Clackmannanshire.
ı W. T. Johnstone, Dumfries-shire.
is Reid, Do.
m Smith, Do.
Little, Do.
Paterson, Do.
t Jackson, Edinburghshire.
James Douglas Burns, Do.
F. C. Cleghorn, Fifeshire.
s Cooper Scott, Forfarshire.
m Reid, Do.
ı Smith, Do.
m Aitken, Haddingtonshire.
t Lewins, Do.
m Duirs, Kincardineshire.
l Brown, Kirkcudbrightshire.
Brown, Do.
ıder Wilson, Do.
ıder Buchanan, Lanarkshire.
r George Gordon, Do.
s Brown, Do.
r M'Ewan, Do.
ı Dickson, Do.
ı Hutchison Stirling, Do.
Forrest Angus, Linlithgowshire.
r Gilchrist, Do.
ı Denholm Pridie, Mid-Lothian.
r Dickson, Do.
Middleton, Do.
ı French, Do.
is Brodie Imlach, Do.
Robertson, Do.
ıder Eugene Mackay, Do.
t Paton, Do.
Clerk, Do.
Robert Skinner, Do.
m Noble Paterson, Do.
' Fisher, Do.
w James Scott, Do.
Alexander Dewar Campbell, Mid-Lothian.
William Lapsley, Do.
George Smith, Do.
Richard Hair, Do.
John Gourlay Buchanan, Do.
Walter George Dickson, Do.
William Simpson, Do.
William Stuart Duffus, Morayshire.
James Grant, Do.
Alexander Forteath, Do.
Alexander Barclay, Do.
John Wilson, Nairnshire.
George K. H. Paterson, Perthshire.
Francis H. Thomson, Do.
James Grant, Do.
James Gray, Do.
William Menzies, Do.
Frederick Fletcher, Do.
James John Mackenzie, Ross-shire.
Walter Scott, Roxburghshire.
James Fala, Do.
John Balfour, Lerwick, Shetland.
Thomas Smart, Stirlingshire.

ENGLAND.

Henry Thomas Castle, Bucks.
William Robinson, Cumberland.
John Howard Norton, Derbyshire.
John P. F. P. Hains, Devonshire.
Edward William Bawtree, Essex.
Fysher Negus, Hants.
William M. M. Fosbroke, Herefordshire.
John Edward Stephens, Kent.
Charles Ford, Do.
James Miller, Do.
Thomas Holt, Lancashire.
George William Brown, Middlesex.
Emanuel Young, Northumberland.
Thomas Neild Froom, Somersetshire.
Charles Wankford Currie, Suffolk.
John White, Westmoreland.
John Hulbert, Wilts.

IRELAND.

Simon Keane, Co. Cork.
Alexander Grant, Do.
Michael Hunter, Co. Derry.
William M'Conochie, Co. Donegal.
John Park Montgomery, Do.
Benjamin William Marlow, Donegal.

Andrew George Malcolm, Co. Down.
Alexander Gordon, Do.
Patrick Trenor, Do.
Edward Tarleton, Co. Dublin.
Thomas Cahill, M.D., Ireland.
Jeremiah James O'Conner, Ireland.
Samuel Gamble, Ireland.
Ethelbert Henry Blake, Co. Mayo.
Edward Moorhead, Co. Monaghan.
William Smith, Do.
John Duffy, Do.
Daniel James Young, Co. Tyrone.
William Gordon, Do.

ABROAD.

Frederick Duncome, Bahamas.
Henry Josephus Hinson, Bermuda.
John William Reynolds, Calcutta.
George Mackay, Cape of Good Hope.
Martin Charles Van Well, Demerara.
Henry William Tytler, East Indies.
Thomas Dehane Lightbody, Gibraltar.
James William George Wyse, Hindostan.
Adam William Thorburn, Jamaica.
James Innes Mason, Do.
George Robert Heron, Do.
Arthur Fisher, Lower Canada.
George Mountain Odell, New Brunswick.
Martin Hunter Peters, Do.
David Gordon, Nova Scotia.
Louis Challier de Grandchamps, Paris.
Vans Christian Clarke, Smyrna.
William Martin Fraser, United States.

Extracted from the Records of the Royal College, by WM. SCOTT, *Secy.*

DR BARRY'S DISCOVERIES.—LETTER TO THE EDITOR.

80 GEORGE STREET, EDINBURGH, 20*th September* 1842.

MY DEAR SIR,—May I request that you will do me the favour to insert, in the October number of your Journal, the following letter, which I recently addressed to Dr Martin Barry. I am, my dear sir, very truly yours,

Dr Cormack. ALLEN THOMSON, M.D.

31*st August* 1842.

MY DEAR SIR.—I have just seen, in the last number of the *London and Edinburgh Monthly Journal of Medical Science*, a paper by my young friend, Mr M'Leod, on the Development of the Blood Corpuscle; and I observe that Mr M'Leod there makes allusion to some observations made by me in 1839, on the Subdivision of the Mammiferous Ovum, as being cotemporary with yours on the same subject.

I did not see Mr M'Leod's paper before it was published, otherwise I should have suggested to him some alteration of the expressions in the passage to which I allude, as they appear somewhat calculated to lead to misapprehension.

I may mention that I made my observations on this subject in the months of July and August of 1839, and was, at the beginning of them, unacquainted with your discovery; but I saw the abstract of your paper, (I think in the printed proceedings of the Royal Society), while I was engaged with my experiments, and then, of course, I considered myself as anticipated in the observations by you, and did not therefore think it necessary, at that time, to give publicity to the results I had obtained, but reserved the account of them for any suitable opportunity that might afterwards occur.

Although the expression in Mr M'Leod's paper may appear somewhat ambiguous, I am confident that his intention was not to claim originality or priority of discovery for me, but to attach importance to my observations as having been made to a certain extent without the knowledge of yours, and therefore as still more confirmatory of yours than if they had been entirely a repetition of them.

As I am most desirous neither to take nor to have given to me what does not belong to me, I have written you this letter to prevent any misconception from arising in your mind, and to assure you that I consider the merit of originality belongs to you in the discovery of the very remarkable fact of the subdivision of the mammiferous ovum in the early stages of its development. I am, my dear sir, very sincerely yours, ALLEN THOMSON, M.D.

Dr Martin Barry, F.R.S., &c. &c.

UNIVERSITY OF EDINBURGH.—*The appointment of Dr Allen Thomson to the Chair of Physiology*, which took place on the 20th September, has added another excellent teacher to the Medical Faculty, which has since last session, as our readers are aware, been greatly revived. Never did a session open under brighter auspices than the present. Dr Reid, the distinguished Professor of St Andrews, was the only other candidate actually nominated. The votes for Dr Thomson were 16; those for Dr Reid, 13.

*** "Books Received" and the "Obituary" are unavoidably delayed.

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Cases of Strangulated Hernia. By* BENJAMIN BELL, F.R.C.S.E., *one of the Surgeons to the Edinburgh Eye Infirmary.*

CASE 1. A woman, 78 years of age, in the enjoyment of tolerably good health, was seized suddenly during the forenoon of June 19, 1841, with severe pains in the lower part of the belly, and around the umbilicus. She took some castor oil, but vomited it immediately. I saw her at 7 P.M. She was then in great uneasiness, and disliked pressure on the abdomen, which was large and pendulous, though not much distended. Upon examining the groins, I discovered on the left side, a firm tumour about the size of a large hen's egg. It was lobulated on its surface, had a broad base, and occupied the usual situation of femoral hernia. She had been unconscious of its existence, but seemed to suffer considerable pain when it was handled, and now remembered having observed a swelling in the same place several weeks before, but as it soon disappeared, she thought no more of it. Her bowels were habitually costive.

An aperient injection was administered without effect. The pulse being rather full, she was then bled from the arm to the

amount of twenty ounces. This caused faintness, and some abatement of her uneasiness; but no change was observable in the hernial tumour. As the symptoms were not very urgent, she had an anodyne draught, which procured her a good night's repose. Next morning, however, the pain and vomiting returned with increased violence, and, as the tumour had become more tense, and fully larger than on the preceding night, she readily consented to an operation.

After several layers of fascia and firm adipose tissue had been cut through, the sac itself was exposed. It had evidently been protruded for some time, judging by the firm connection which existed between it and the circumjacent textures. Upon laying it open, a few drops of reddish serum escaped, and a small portion of intestine presented itself, dark-coloured from congestion, but smooth and glossy on its surface. A very limited division of the neck of the sac at its upper and inner part was sufficient to relieve the stricture, and the gut passed up readily into the abdomen.

The pain and tendency to vomit ceased immediately; the bowels were opened after one or two mild doses of opening medicine; she soon recovered her usual health, and is now going about again as formerly.

This case shows that the operation for strangulated hernia may be performed with advantage even in extreme old age, provided there be no unnecessary loss of time in having recourse to it. Had a few additional hours elapsed in the present case, the probability of a successful issue would have been much smaller. For, on the one hand, the congested state of the gut might have proceeded so far as to become irremediable; and, on the other, (keeping this first danger out of view,) the continued pain and vomiting must have placed her in a much less favourable position, not merely for the operation itself, but for the subsequent granulation and closing of the wound.

Case 2. A woman, 50 years old, of thin habit, and never enjoying robust health, was straining at stool on the evening of June 24, 1840, when a swelling suddenly appeared in her left groin. She never observed anything similar before, although it would appear, that once or twice she had seen what she calls an enlarged kernel, very nearly in the same situation. I visited her for the first time on the 26th. The tumour, which had increased in bulk since its first appearance, was then about the size of a small hen's egg, smooth on its surface, and so very firm and unyielding, that, irrespectively of the history and symptoms, it might have been mistaken for an enlarged gland. It occupied the situation of femoral hernia, and was hardly, if at all, tender on pressure. The symptoms were urgent: no motion of the bowels since the tumour appeared; great irritability of the stomach; a twisting pain

of the belly coming on in paroxysms every few minutes, accompanied by great thirst, a furred tongue, and feeble pulse. She had been bled from the arm, and had taken several doses of opening medicine. The taxis was now employed perseveringly for some time, but it produced no impression upon the hard and unyielding tumour. An operation was evidently indispensable, but she resolutely withheld her consent, until the following afternoon, about three days after the commencement of the symptoms.

Operation.—The sac, when exposed, was found to be extremely delicate, and closely adherent to the contained parts, a thin layer of recent lymph being interposed. Upon laying it open, a dark-coloured mass of omentum presented itself. This, from the elasticity now perceptible in the tumour, evidently embraced within it a portion of intestine; and, upon cutting through it at one point, the dark and congested gut came into view. The stricture at the neck of the sac was extremely tight, there being barely room for the finger-nail as a director to the knife. The margin of the opening was notched at several points, and then the protruded parts returned readily enough into the abdomen.

The vomiting and pain ceased immediately after the operation; every thing went on favourably; and the wound was quite healed in about three weeks. I saw her lately in good health.

An unnecessary length of time was suffered to elapse in this case, previous to the operation, from the patient's extreme unwillingness to undergo it; and we must therefore account in part at least for the favourable state of the strangulated gut, by the complete manner in which it was invested by the omentum. The history of the case, and subsequently, the delicate appearance of the omentum, showed that the disease was of comparatively recent origin, so that after the first attempt at reduction had failed, an operation was urgently called for; because, under ordinary circumstances, we could anticipate nothing else from delay, than inflammation or sphacelus of the strictured gut. It is generally admitted, that we can seldom expect much advantage in femoral hernia, from a continued perseverance in the use of the taxis, unless in cases of long standing, where the textures are loose and the opening much dilated. I believe that cases of femoral hernia are rarely met with, in which, after the symptoms of strangulation have existed for a few hours, reduction of the tumour can be accomplished without an operation.

The following unfortunate case reads the same important lesson with the others, and seems worthy of being recorded, because the fatal issue might have been prevented, in all likelihood, by an early operation.

Case 3. A man, 35 years of age, had been affected, for several years, with an inguinal hernia of the right side, which was never allowed to descend very far, being kept up by the constant

use of a truss. But in spite of this precaution, he had been subject, ever since its first appearance, to occasional attacks of "twisting" pain, as he expressed it, in the abdomen. On the 26th of March 1841, he had one of these paroxysms of more than ordinary severity, accompanied by obstruction of the bowels. He was speedily relieved by an anodyne draught, followed by some opening medicine, and returned to his usual employment. On the evening of April 2, he experienced a sensation, as if something gave way suddenly a little above the situation of the rupture, which—the truss being on at the time—he believed to be properly reduced. This sensation was followed immediately by a recurrence of severe griping pain in the belly, with constant and urgent vomiting. These symptoms continued all night, but subsided for several hours during next forenoon, without, however, any motion of the bowels being procured, notwithstanding large and repeated doses of castor oil.

The pain and vomiting returned in the afternoon, and I saw him late in the evening. He was then in great distress, vomiting, or at least retching, with extreme urgency and violence. He referred the pain, which came on in paroxysms every few minutes, entirely to the left side of the belly at its lower part, and disliked pressure in that situation. The hernia was on the opposite side. I examined the whole region very carefully, under the distinct impression that the symptoms were most probably connected with it. The external ring was of moderate size, and apparently quite free. The *vas deferens* could be felt passing through it, in a thickened state. There was no perceptible fulness along the direction of the inguinal canal, or in the situation of the internal ring, although pressure with the finger, in that part, created some uneasiness. The abdomen was full, but soft and free from tympanitis; the pulse soft, and not accelerated; the tongue furred.

I regret, that after considering all the circumstances of the case with my friend Dr Pattison, who called me to it, we formed the conclusion, that although the symptoms were probably connected more or less directly with the rupture, they were not such as to warrant an operation for strangulated hernia. We were deceived by the seat of pain, and by the patient's own belief that the rupture was in a state of satisfactory reduction. Under this impression, we treated the case as one of ileus, by blood-letting, tobacco, large injections, and such other remedies as the progress of the symptoms seemed to call for. He got gradually worse, however, and in the course of the day, fell into a state of increasing collapse, which quite precluded farther interference. Death put a period to his sufferings about fifty hours after the commencement of the attack.

Inspection.—A small portion of the *intestinum ileum* was stran-

gulated at the internal ring. It was dark-coloured, but the surface still retained its glossiness. The structure was extremely light. From the appearance of the hernial sac, which descended only a short way below the internal ring, it was more than probable, that the rupture had never protruded from the external ring at all, and that the truss, which he wore very constantly, had merely confined it within the inguinal canal without preventing its escape from the abdomen.

There is reason to believe, that had an operation been performed, this poor man's life might have been saved. It would be a good rule, therefore, under similar circumstances, to cut down upon the course of the inguinal canal, because, did the protrusion exist, the mere division of these external parts could not increase the patient's danger. The propriety of this practice was well illustrated, by a case which occurred some years ago, in St Bartholomew's Hospital. The symptoms and history were those of strangulated hernia; but no tumour could be detected in the inguinal region, after the most careful and repeated examinations. An operation, however, was determined on, and the patient being placed on the table, a fulness was then observable over the internal ring, which had escaped notice so long as he lay in bed. A small portion of the gut was found to be strangulated.

ARTICLE II.—*Surgical Cases and Observations. By* JAMES SYME, Esq., *Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen.* (With a Plate.)

1. *External Aneurism of the Internal Carotid Artery.*—In the early part of last April, I was requested by Sir William Newbigging, to meet him and Dr Abercrombie in consultation, on the case of a lady about 60 years of age. She was rather tall and very thin, with the general appearance of feebleness inadequate for any sustained exertion. Her complaint was a tumour of the throat, in the situation of abscess connected with the tonsil. It was first noticed in the month of November preceding, after more than usual suffering from a dry hard cough, which had existed with little interruption for five or six years. The swelling, at first very small, gradually increased, and at length occupied the fauces so as to interfere with deglutition, and occasion uneasy feelings of distension by its bulk, which fully equalled that of a large walnut. It was not circumscribed in appearance, presenting, indeed, the diffused aspect of a purulent collection, but when examined by the finger was felt more distinctly limited than an abscess of the part. At the same time, its contents were found to fluctuate throughout their whole extent, and a strong

uniformly distending pulsation could be perceived over every part of the tumour accessible to touch.

There could be no doubt as to the nature of the case, and as little in regard to the prognosis of its result, if effectual means were not taken to arrest the progress of the disease. It was plain that an aneurism had formed in the course of the internal carotid artery, between its origin from the common trunk, and entrance into the cranium. And it was no less obvious, considering the progressive enlargement that had already occurred, together with the continued excitement from coughing, that the swelling, if permitted to increase, must soon encroach on the pharynx, so as to impede deglutition altogether, or cause suffocation, unless the sac should ulcerate and relieve the patient by hemorrhage at an earlier period of her sufferings. We therefore decided upon recommending that the common carotid should be tied, and, meeting with no objection on the part of the lady or her friends, agreed to perform the operation on the following day.

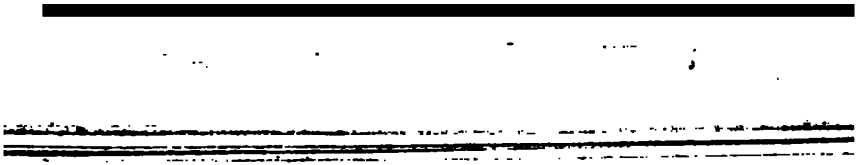
In presence of the gentlemen above mentioned, together with Drs Patrick Newbigging and Mackenzie, I cut down upon the vessel, and tied it with a single silk ligature, just below the crossing of the *omo-hyoideus*; no difficulty whatever was experienced in effecting this, hardly a tea-spoonful of blood escaped, and the patient walked to an adjoining bed-room without appearing to suffer or to have suffered almost any disturbance. During the day she complained of pain in the back of her neck near the occipital region, and struck me as looking even more pale than she had done previously; the pulsation of the tumour still continued, but was much less forcible. In the evening a draught containing gr. xxx of the solution of muriate of morphia was prescribed in the event of restlessness, but not proving requisite, was withheld.

Next morning, about six o'clock, I was informed that the patient had all at once been seized with nearly incessant vomiting and discharge from the bowels. On visiting her, I found all the signs of approaching dissolution, the weakness being extreme, the features bloodless, sunk, and altered in expression, and the pulse small, feeble, and irregular. The evacuation of greenish watery fluid both upwards and downwards, still continued, though not so frequent as at first. Notwithstanding the use of stimulants, no improvement took place, and she expired about six o'clock in the evening, thirty hours after the operation.

The parts concerned were examined in presence of the gentlemen who had witnessed the operation, with the exception of Dr Abercrombie, who was otherwise engaged, and with the addition of Mr Goodsir, who assisted me on the occasion, and afterwards dissected the preparation. The artery was found to be tied just

M.r SYME'S Case of Aneurism of the Internal Carotid.

Jno. Johnson &c



as could have been desired, without any disturbance of the vein, nerves, or neighbouring textures. It was traced upwards to the bifurcation, immediately beyond which the internal carotid dilated into an aneurismal sac. We then opened the head to ascertain if the disease extended within the cranium, but discovered nothing in the state of the vessels at all abnormal. The lower jaw was next divided, so as to afford free access to the tumour, which, being exposed up to the base of the skull, allowed us to see that the artery, before entering the carotid canal, regained its usual characters. I cut it across there, and detached the whole extent of the vessel down to the root of the neck.

The drawing, for which I am indebted to my friend Mr Moore, shows very distinctly the position of the aneurism in regard to the artery, and also that of the aperture in the vessel which gave rise to its production. It appears that a crevice nearly half an inch in length, had been formed through the inner coats in the upper or anterior surface of the internal carotid, about midway between its origin from the common trunk and entrance into the cranium; that the external coat had expanded so as to form the sac of the aneurism, and that the pressure caused by the tumour, which was considerably greater than would seem from the preparation after maceration in spirits, had distorted the course of the vessel, and given it a sigmoid direction. The contents of the sac were coagulated, except at a narrow channel corresponding with the current through the artery, which, it may hence be inferred, had not been completely arrested. Indeed, this was not and could not reasonably be expected, when the free retrograde passage afforded by the anastomosing communications of the external carotid was taken into account.

The result of this case was not less unexpected than distressing. I had frequently tied the carotid for aneurism and hemorrhage, and never met with the slightest bad consequence from the operation. The patient, though thin and fragile-looking, seemed free from any organic disease besides the aneurism, and possessed in a remarkable degree that composed disposition of mind which is so favourable to recovery from injuries. The artery was tied with more than usual facility, and with the most perfect insulation that could be desired. Though doubts might be entertained as to the cure of the disease, through want of sufficient obstruction in the flow of blood, no apprehension was entertained of danger from the operation, and I feel quite unable to offer any satisfactory explanation of its fatal issue.

In a pathological view the case is interesting, from presenting an example of aneurism in a very unusual situation. The branches of the carotid artery within the cranium occasionally expand into aneurismal sacs, which are apt, by their bursting,

to cause sudden death from hemorrhage. But aneurism of the internal carotid artery, exterior to the cranium, does not seem to have been hitherto ascertained and recorded.

2. *Femoral Aneurism—Operation—Recovery.*—William Garrick, aged 17, from Shetland, was admitted into the hospital on the 20th of May 1841, on account of an aneurism of the femoral artery. He stated that, in the latter part of February, when cutting a piece of wood, with the large knife used by seamen, he had accidentally thrust the blade into the inner side of his left thigh, a little below the middle. A great gush of blood immediately sprung out, but was speedily arrested by the pressure of four half crowns which he had the presence of mind to apply firmly over the wound. In a few days, the bandage being taken off, it was found that the wound had healed, and nothing unusual was noticed until a week afterwards, when he perceived a sort of thrilling sensation at the injured part. This increased daily, and in the course of another week, a pulsating tumour, the size of a small hen's egg, was noticed; he still took no alarm, but finding that the tumour progressively increased, at length applied to a surgeon, who explained the nature of his case, and sent him off to Edinburgh.

When admitted, he complained of coldness in the limb, which was also slightly œdematous, notwithstanding the support of a flannel bandage which had been put on before he left home. The tumour was about the size of a goose's egg, had a strong uniformly distending pulsation, though not very distinctly defined, and lay under the lower edge of the sartorius. The sac could be readily emptied by pressure, either directly over it or on the trunk of the artery at the brim of the pelvis, so as to make all trace of the swelling disappear.

It was thought, in this case, that simple ligature of the femoral would not prove sufficient for effecting a cure; and that, as in brachial aneurism, from wounding the artery in venesection, it would be necessary, after opening the sac, to tie the vessel on both sides of its aperture; but for my own part, I did not despair of success, from merely obstructing the artery above the tumour, since the anastomosing circulation beyond it was much less free than at the bend of the elbow. At the same time I greatly dreaded the danger of conveying ligatures round the artery, where it lay within the sac, in close proximity to the vein, or not improbably almost incorporated with it by the pressure of the blood. I therefore resolved to try the effect of simply tying the femoral in the ordinary way, as this proceeding seemed to be safe in itself, and in the event of failure, promised to present no obstacle to adopting the other alternative.

The operation was performed on the 26th; the pulsation ceased immediately and completely, without any return; the

swelling diminished daily; the ligature separated on the 14th of June, (the eighteenth day); and the patient went home cured on the 23d of the same month.

3. *Fracture of the Leg—Sloughing—Hemorrhage—Ligature of the Femoral Artery—Recovery.*—Jane Wood, aged 62, was admitted on the 9th of April 1841. She had suffered a simple fracture of the tibia and fibula, which through careless treatment became compound, with extensive suppuration and undermining of the integuments and muscles. About the middle of May the sore took on a sloughing disposition, and rapidly enlarged, exposing the tendons and ununited bones. On the 1st of June a sudden gush of blood took place from the situation of the posterior tibial artery, but ceased immediately through the application of cold and elevation of the limb. In the middle of the following night at least two pounds of blood were lost before the house surgeon could be summoned; and as the hemorrhage then did not continue, slight pressure merely was applied. At nine o'clock the following morning (the 2d) blood gushed out as violently as ever, and firm compression was effected over the part from which it proceeded. I was then sent for, and tied the femoral artery in the usual way, above the crossing of the sartorius. The following extracts from the hospital journal will show the patient's subsequent progress:—

"*June 15th.* From the day the artery was tied, there has been no bleeding; the foot has remained of good temperature; and there has been no extension of the sloughing. The sloughs are now nearly all separated, and the sphacelated tendons were to-day divided, to keep the foot at rest, as the fracture was constantly disturbed by twitching of the muscles. Little or no union has taken place between the bones, but the limb is retained in a good position, being laid on its outside in a leather splint, with the knee bent. *The wound made on tying the artery united by the first intention, without discharging a drop of matter.*

"*July 22d.* The wound is contracting steadily. Union is distinctly taking place in the fracture, and the general appearance of the patient is distinctly improved.

"*September 1st.* The bones are firmly united, and the sore is nearly healed. She has been out of bed several times, and takes her food well. The ligature separated on the 38th day."

The recovery of this emaciated unhealthy-looking old woman, under the circumstances now detailed, was certainly very unexpected and surprising. It ought, I believe, to be ascribed chiefly to the unremitting attention of Dr Mackenzie, under whose immediate care she was after her fracture became compound.

4. *Popliteal Aneurism—Operation—Recovery.*—Archibald Hamilton, aged 25, was admitted on the 26th of August 1841, on account of a popliteal aneurism. He stated, that pain in the

left ham had been felt about five weeks, but the tumour only for three, and that it had not increased in size, except slightly, during the last week, when, in the course of his employment as porter, his foot slipped while he was descending a trap stair. The swelling was found to occupy the hollow of the ham completely. It was circumscribed, and pulsated strongly. The artery was tied on the 30th; the ligature separated close to the knot on the 6th of October. He was dismissed cured on the 27th.

5. *Popliteal Aneurism—Operation—Recovery.*—Robert Anderson, aged 33, was admitted on the 15th of February 1842. He stated that his employment consisted in loading the Canal luggage boats, and that in the course of it he had frequently occasion to leap ashore with all his force. About a month before, his right leg had suddenly become stiff, benumbed, and swelled below the knee, but did not prevent him from discharging his duty during the following fortnight, at the end of which he for the first time noticed a pulsating tumour in the ham. He then applied a poultice, and sent for a surgeon, who told him the nature of his complaint, and made him keep quiet in bed. Finding no improvement, he entered the hospital, to undergo the operation requisite for his relief. There was then still some œdema of the leg, and congestion of the veins below the knee. The aneurism was circumscribed, but filled the popliteal space. It pulsated strongly, and could be emptied by pressure on the femoral artery. I performed the operation on the 17th. On the 27th of March the ligature separated close to the knot, and on the 31st he was dismissed cured.

6. *Popliteal Aneurism—Operation—Recovery.*—John Pearson, aged forty-two, was admitted on the 13th of July 1842, on account of a popliteal aneurism, which completely occupied the right ham. He stated, that in the course of his employment as a plasterer, he was going down a ladder about six weeks before, when, without being conscious of straining, or otherwise hurting himself, he suddenly felt the right foot and ankle stiff, and in going home, observed them to be slightly swollen. He continued at his work for several days, but then noticed a tumour in the ham, and confined himself to bed.

The artery was tied on the 19th, the ligature separated on the 13th of August, and he was dismissed cured on the 12th of September.

These cases of popliteal aneurism show how insidiously the disease commences, since there can be no doubt, that in all of them it had existed much longer than the patients supposed. Aneurism, wherever situated, does not appear to be in itself the source of painful sensations, or, until coagulation is far advanced, to affect the circulation in any material degree. It is only when the tumour becomes so large as to press injuriously upon the

neighbouring parts, that symptoms of appreciable importance present themselves. In these there will of course be some variety, corresponding with the difference of organs and textures concerned; but from the nearly constant vicinity of large veins and nerves, the predominant signs are usually œdema, coldness, and pain. The absence of characters apt to attract the attention of patients in the early stage, should not be lost sight of in the diagnosis of the disease. I once operated upon a major of dragoons, who had unquestionably laboured for many months under aneurism of the ham, without being aware that he did so, or relinquishing his professional duties, and who actually followed the hounds with unabated energy the very day before the existence of a large pulsating tumour was ascertained. In another case which came under my care, the patient, a captain in the army, had been treated during six months for sprain of the ankle, before it was discovered that he suffered from a popliteal aneurism, though in all probability it had originated from the same exertion that injured the joint, which was leaping from the summit of a rotten paling in the pursuit of partridges which his dog had pointed.

In two of the cases, it will be remarked that the ligature separated at the knot, leaving the noose which surrounded the artery. This was owing to the length of time the thread remained in the wound, (thirty-six and forty days), and that again must be ascribed to the small amount of local disturbance caused by the operation. The more the artery is detached, and the more its neighbouring textures are torn or contused, the more rapidly and extensively does ulcerative absorption ensue; and when hemorrhage takes place, it is almost sure to do so within sixteen days from the date of the operation. Slow separation of the ligature, therefore, augurs safety; and if the thread remain so long as to rot, and leave a portion in the wound, it does not appear that there is reason to apprehend any troublesome consequence; but if separation of the entire ligature should be particularly desired, it will be proper to twist the thread a little every day after the end of the third week.

In some remarks on the ligature of the femoral artery, published in the first Number of this Journal, (January 1841), the object of which was to enforce the importance of some minutiæ in the process, I stated, that in no instance had any of my patients suffered the slightest bad consequence from the operation, and I am still able to say so. It is true, that in one case, the aneurism, being large and diffused, was not cured, though in the following year dissection showed that the artery had been obstructed for several inches at the part where the ligature was applied. But this result, of course, has nothing to do with the success of the operation for obstructing the vessel.

Article III.—*On the Obstetric Perforator.* *By* David Smith, M.D., *Glasgow.* (With a Plate.)

The perforator is the most ancient instrument connected with the obstetric art, and none has been so greatly modified, or appeared under such a variety of forms. The earliest seem to have been sufficiently simple in construction: Thus, Hippocrates, after recommending the warm bath, and anointing the pudenda with warm oils, in cases of obstructed labour, says, that if these means fail, the head is to be opened with a *knife;*[1] and, indeed, from the age in which he wrote, down to last century, midwifery instruments consisted almost entirely of knives or lancets for opening the fœtal head, and blunt or sharp hooks for extracting or dismembering the child. To enter into any detailed account of these, however, is not my object; my remarks shall be restricted to those perforators most generally employed at the present day.

The perforators best known in this country, are those of Dr Smellie and M. Levret. That of the former is merely a strong long-handled scissors, the backs of the blades being neither exactly sharp nor blunt,[2] and furnished each with a projecting shoulder or rest, to prevent them from entering the head too far; and that of the latter, extensively used amongst us under the name of Dr Denman's perforator—although originally the invention of Bing of Copenhagen—is also formed scissor-like, having rests or shoulders similar to the former, but with its cutting edges outside.

Against the employment of these perforators, many objections may be urged; and it is matter of surprise how instruments so unscientific in construction, and unmanageable in application, have remained so long in such general use. The cranium being perforated, should the operator alone dilate the blades to enlarge the incision, he must either withdraw the hand from the vagina, along which the perforator was guided to the head, or follow the instruction given by Dr Denman, of leaving the left hand in the vagina, and thrusting the thick part of the right hand between the stems of the instrument; or, while the one hand protects the soft parts within the pelvis, the forefinger and thumb of the other hand being placed in the bows are separated as far as may be necessary; or, the hand in the vagina acting as a fulcrum, one blade is extended in one direction, and the opening enlarged by moving the other blade after a similar manner in the contrary

[1] De Morb. Mul., lib. ii. sect. 5.

[2] "The scissors ought to be so sharp at the points as to penetrate the integuments and bones when pushed with moderate force, but not so keen as to cut the operator's fingers or the vagina in introducing them." (Dr Smellie, vol. i. chap. 3, sect. 7, number 2.)

direction. But it appears to me that each of these methods of practice is attended with considerable risk. With regard to the first, viz. the withdrawing of the hand from the vagina, and dilating the blades by using both hands for this purpose, such procedure cannot be too strongly condemned; since, by so doing, the operator loses all means of ascertaining whether the instrument may not have escaped from its insertion in that part of the head he wished to open, as well as the power of guarding to a great extent the structures of the mother. The second is far worse than the first, for, should it be requisite to employ much force in thrusting the thick part of the hand between the handles, from the resistance experienced in breaking up the cranium, the blades will not only be sunk too deep into the head, but should the bone and integument suddenly give way, the uterus must be dreadfully lacerated—there being nothing to prevent the separation of the blades. The third method is, in my opinion, perfectly impracticable to the great majority of practitioners. Few people have so much strength, with the finger and thumb placed in the bows of the perforator, as to dilate the blades through the coverings of the brain, and fewer still can be able to stretch so far as to open the head thoroughly. The fourth method is probably the best, but in cases where the ossification of the head is more than usually advanced, the attempt to enlarge the incision must often fail, for, with one blade acting as a lever, the head is more likely to be moved from its presenting position than to be broken up, unless, indeed, the uterus has contracted so firmly around the fœtus as to prevent any movement.

As a mean of avoiding these objections, and of rendering the scissors perforator less dangerous to the maternal structures, we have been recommended to employ an assistant in enlarging the opening into the head. The instrument being passed to the rests through the integuments and bone, and the accoucheur having the fingers of the left hand in the vagina to inform him of the extent of his incision, and to guard the soft parts from injury, with the right hand he takes hold of one of the handles of the perforator, while the assistant takes the other, and the blades are thus dilated. The advantage of this mode of practice, however, is more nominal than real. There is not only the inconveniency of the presence of a second party to accommodate the operator, but as no two persons can, under all circumstances, act in correct uniformity in employing an opposing force, there exists great probability of the head being opened in a jerking manner; and the assistant having no knowledge of what is going within the pelvis, is placed in a position equally dangerous, in so far as doing injury to the mother is concerned, with one opening the blades by himself, without the hand in the vagina.

It has been thought by some that the modifications of the

scissors perforator invented by Professor Nægelè and M. Nolmes, in which the blades are made to diverge by closing the handles, are sufficiently manageable and safe. With these instruments, the necessity either of having an assistant present, or of removing the hand from the vagina for the purpose of opening the blades, is avoided, but in bringing the handles together, more especially if done quickly, the soft structures may be pinched; and the great defect in all these perforators is, that none of them has means for preventing the sudden separation of the blades in the event of the instrument slipping, or the bone through which it is passing unexpectedly giving way. No doubt, it is true, that in the hands of a skilful operator, these perforators may be employed with little risk of doing injury to the mother from the accident to which I allude, but it cannot be denied that those who employ any of those instruments for the first time, and who are, of course, ignorant of the occasional difficulties that may arise in any peculiar case, may find to their sad experience, that the vagina and neck of the uterus have been lacerated in opening the head, so much so, as to cause the death of their patient. In May last, on reading a detailed paper before the Glasgow Medical Society referring to this subject, one of the members stated, that in his practice he had found the old scissors so easy of application, that it had escaped his memory in what manner he opened the blades and protected the soft parts; but while I admit, that, to practitioners of such experience, craniotomy, in the great majority of cases, is easily and safely performed, I cannot help thinking that the young practitioner can never be too much alive to the necessity of caution in every step of this horrible operation, nor be too guarded in avoiding injury to his patient. When we find that in 349 cases of obstructed labour, in British practice, in which craniotomy was had recourse to, 70 of the patients died, and of these deaths, so far as I have been able to ascertain, nearly one-fourth was occasioned by laceration of the vagina and uterus, and that the operators in these cases were men of eminence and talent,[1] surely we are fully justified in stating that the scissors perforator, in all its forms, is an unmanageable and dangerous instrument.

The celebrated Peter Frank long since remarked that wounds from spicula of bones, or sharp instruments become blunt, &c., producing inflammation of the uterus, usually prove fatal; and, as in making a crucial incision, the bones of the head may be so

[1] "Of 110 cases of difficult labour in which I have been compelled to use the perforator and crotchet, 88 women have recovered, and 22 died. In nine, death took place from inflammation of the uterus, one from inflammation of the mucous membrane of the bladder, caused by long retention of urine before delivery, five from uterine hemorrhage, *five from laceration of the uterus and vagina*, one from puerperal convulsions, and one from gangrene and sloughing of the external parts." (Dr Lee in Lond. Med. Gaz.)

splintered, that in extracting the fœtus the uterus is lacerated, or this organ, as we have seen, may be injured by the perforator, it has been recommended that the opening into the cranium should be made with an instrument which would neither injure the mother nor splinter the bone, and at the same time disfigure the child as little as possible. Accordingly, many of our continental brethren prefer the trephine-shaped perforators which have been used by Professors Assilini, Iserg, &c., but however ingenious some of these may be in construction and safe in application, so far as the maternal structures are concerned, they are nevertheless very inefficient in effecting the great object of perforation, viz. lessening the head. Were the mere opening into the brain all that was necessary to be done for allowing the head to become diminished in bulk, then the trephine perforator would excel all others, inasmuch as the entire removal of a portion of integument and bone might be supposed to permit of a more free escape of the brain than there could be through an incision, the edges of which might become closed. But it must not be forgotten that if this circular opening be made in the centre of a bone, the bones of the head do no more overlap each other during the contractions of the uterus, than previous to making the opening; and if it be made at a fontanelle, small segments will be cut out of the contiguous bones, having points sufficiently sharp, it may be, to cause laceration, although not to the same degree as if the head were broken up with a bladed perforator. Thus all that can be done with the trephine perforator, is the formation of a circular opening into the brain, and its advantage is, that it may be employed by one person with perfect safety to the mother; while with the scissors perforators the head is not only opened, but the bones have their attachments loosened, thereby rendering the whole more compressible, at the risk, however, of inflicting severe injury on the soft structures within the pelvis. A perforator, therefore, to be perfect, should be safe and simple in its application, and to be really useful should be capable of *breaking up* the head, similar to what can be done with the scissors; the danger from the splintered bones being greatly avoided by extracting the fœtus with the common curved forceps where the degree of pelvic deformity is not unusually great; "for by this means the head is equally grasped and compressed, the soft parts to a considerable extent are protected by the blades, and the whole mass brought down exactly in the position in which it presented."[1]

About a year ago I described to some of my friends an instrument which I considered well calculated to fulfil the objects of a safe and efficient perforator; and shortly afterwards got Messrs Hilliard and Chapman of Glasgow to make the model represented

[1] Dr Rigby's Midwifery, p. 164.

in the plate. The points are formed in a manner somewhat similar to those of the scissors perforator, with projecting rests to prevent them from entering too deeply into the head, and having the curve added by Dr W. Johnson, for the more easy guidance of the instrument along the fingers in the vagina to that part intended to be opened; but the blades are made to diverge by the drawing down between them of a wedge attached to a screw secured into the handle when this is turned, as in Weiss' *Speculum Vaginæ*. The greatest breadth at the shoulders is three-fourths of an inch, being little more than in the scissors across the rests, and the length is eleven inches; but Dr Pagan, professor of midwifery in this University, found, in employing it to open a head which had not entered the brim of the pelvis, that it was too short to reach the *basis cranii* in breaking down the brain, although sufficiently long to make the crucial incisions. Messrs Hilliard and Chapman will have another finished in a few days nearly two inches longer, in which the blades will be of the same size as in the model, but the part of the instrument to which they are attached is so long, that, in perforating above the brim, the handle will be outside of the vagina.

By this change which I have made in the construction of the perforator, I have brought into operation the action of a power so great, yet so perfectly under control, that whether the perforation be made at a suture or through bones, no resistance is felt to the steady and uniform movement by which the head is opened; and the sudden separation of the blades, occasioned by the bone through which they are passing unexpectedly giving way, is altogether prevented. In short, this instrument is as unlikely to injure the soft structures of the mother as the trephine employed by some on the continent; and it breaks up the head as effectively as can be done with the scissors.

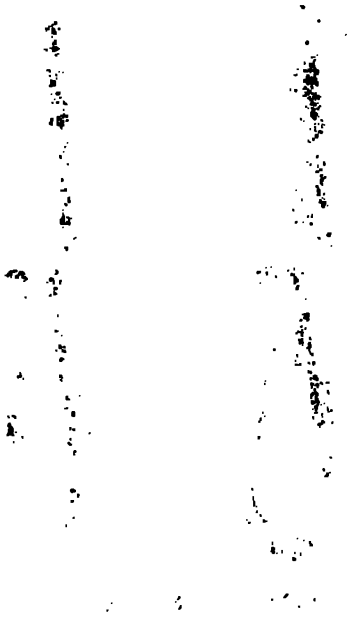
Explanation of the Plate.

Fig. 1. Shows the perforator with the blades closed, as inserted into the head.

Fig. 2. Shows the blades dilated.

Article IV.—*Remarks on Dr Stark's Statements on the Animal Matter of Urine in Pregnancy. By* Golding Bird, A.M., M.D., F.L.S., *Lecturer at Guy's Hospital, London, &c., in a Letter to the Editor.*

My dear Doctor,—It is with great regret that I feel myself called upon to take some notice of the extraordinary mis-statements made in connection with my name, on the subject of the



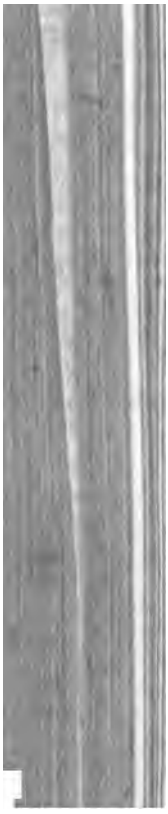
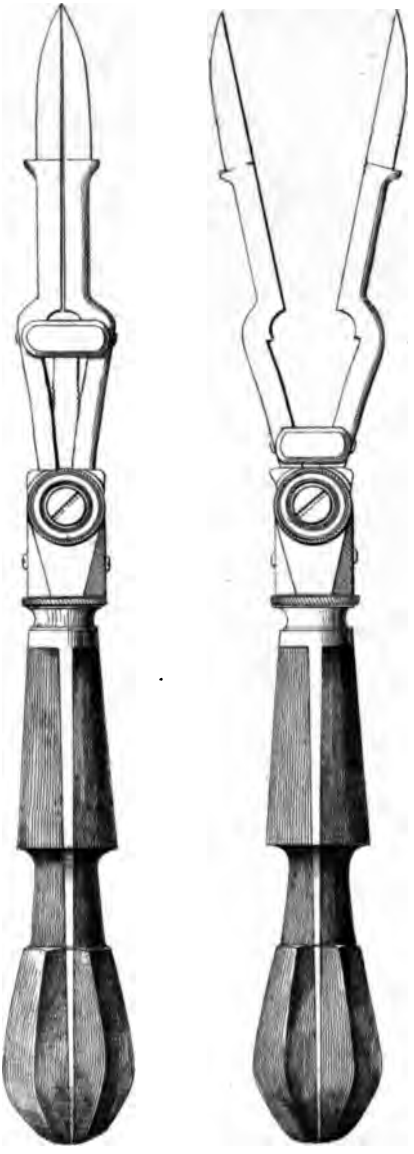


Fig. 1 Fig. 2.



D.r Smith's Perforator.

J. Barr lith. 142 Trongate Glasgow.

irine of pregnancy, in the September Number of your excellent ournal. I confess I never read any paper which contained in a ew pages so many misrepresentations: it affords a melancholy nstance of the manner in which the opinions of others are misnterpreted by those who have adopted different views.

"Lurida præterea fiunt, quæcunque tuentur Arquati."

I have nothing to do with Dr Stark's allusion to the views of Dr Griffith. I have known for some years that gentleman as a alented and industrious member of our profession, no less than s a patient and accurate experimenter; and with this feeling, I entured to communicate his paper to you for insertion. I know ot, however, by what authority Dr Stark assumes that I have dopted the conclusions at which Dr Griffith has arrived; he cerainly has exceeded the bounds of propriety and courtesy, by aking this liberty without my sanction. My views on the subject under discussion remain unchanged since their publication in *Guy's Hospital Reports*, two years and a half before this vituperative reclamation of Dr Stark.

This gentleman states, that "the clear urine of the pregnant emale, which, according to Dr Griffith and Dr Bird's views, ought o consist of a saturated solution of lithate of ammonia, notwithtanding all these theories, most pertinaciously remains clear, hough acids be added." P. 805. I know not on what grounds Dr Stark has connected my name with this opinion, which nothing have ever written or stated can justify. My words are,—'From the investigations I have made, the greasy aspect of the ellicle of the so-called *kiestein* arises, not from the presence of fat, but from the numerous crystals of triple phosphate, which, from heir brilliancy, produce this glistening appearance: *with regard o the nature of the animal matter mixed with these crystals, it is difficult, in the present state of physiological chemistry, to give a positive opinion: it is not mere albumen or casein, although much loser allied to the latter than to any other product of organisation I m acquainted with*, especially when we connect with its chemical haracter the powerful cheese-like odour so frequently evolved, uring its development in the urine, in the form of a pellicle. To his view may be objected the circumstance, that the urine yieldg it, *does not coagulate on the addition of acetic acid:* this, howver, is by no means an important objection, as milk, when conderably diluted with a saline solution, or even water, is not perptibly troubled by acids: so that whilst it may be fairly conlered as constituted of an imperfect caseous matter, mixed with ystals of the ammoniacal phosphate of magnesia."—*Guy's Hospal Reports*, April 1840, pp. 20, 21.

Another equally extraordinary statement occurs at p. 808. Stark there states, in the *kiestein* pellicle "globules are seen

in all sorts of agglomerations, forming rounded or irregular masses of various sizes, from the size of small pus corpuscles, to bodies of three or four times their size. If former investigators into the nature of this peculiar pellicle failed to detect its minute composition, it only shows their want of observation, their unfitness for pursuing minute microscopic investigations, or the imperfection of the instruments they used." This remark, which would have fallen with a better grace from a veteran in physiological chemistry, than from its present author, is unnecessary and groundless, at least so far as it applies to myself, as the following extract from my paper will prove:—"The pellicle thus procured, appeared glistening with a lustre like that of spermaceti: when placed under a microscope, and examined with an object-glass of a quarter-inch focal length, myriads of superb triangular prisms, strongly refracting light, and dissolving it into colours, were seen imbedded in a mass of irregular granular matter mixed with which, might here and there be seen *patches of tolerably regular globular bodies.* The transparent triangular prisms were soon recognised as the well-known crystals of triple phosphate of magnesia; they were so beautifully distinct, and their angles so sharply defined, that the whole became a most interesting microscopic object; some of the crystals were placed on end, and thus appeared like triangular plates."—*Guy's Hospital Reports*, 1840, p. 18.

My reasons for regarding the organic constituent of kiestein as an imperfect caseous matter, have been so long before the profession, that I do not feel called upon further to allude to it than to observe, that the remarks in connection with my "very fine theory" and "unphilosophical explanation" ought rather to be directed against the real author of these views, Professor Burdach of Königsberg, with whom I am content to bear the weight of Dr Stark's sarcasms. He will, however, I am sure, permit me to correct his statement, that "if the areola, however, and other peculiar appearances of the nipple and breast generally, are proofs of anything, they are that the breasts are not engaged in secreting milk," p. 311. If he will consult any friend, who happens to be engaged in obstetric practice, I feel sure he will be informed that frequently in the cases of plethoric women, in the latter months of pregnancy, when the areola is best developed, jets of a milky fluid often escape from the nipple. Whilst engaged some time ago in examining, with the late Sir Astley Cooper, the different varieties of milk, I had repeated opportunities of examining this fluid secreted in the latter months, and in every case it presented myriads of globules, and in fact resembled diluted milk.

In spite of Dr Stark's opinion, I hold the views of Professor Burdach, which I have adopted, to be philosophical, and based on the great axiom of inductive reasoning, that to similar effects

similar causes should be assigned. "Ideoque effectuum naturalium ejusdem generis eædem assignandæ sunt causæ, quatenus fieri potest." (*Newtoni Reg. Philos.* ii.)

When the elements of bile and urine are secreted and their escape impeded, they enter the circulation and are thrown off by other organs; therefore, by a parity of reasoning, if milk or its elements be secreted and not eliminated from the body, it is not inconsistent to suppose that they may re-enter the circulating mass, and be evolved by the kidneys.

The last misrepresentation I shall notice, is one which a common sense of justice ought to have deterred Dr Stark from committing. He alludes to my paper on urinary deposits in *Guy's Hospital Reports* for April 1842, where, at page 187, I describe a peculiar animal product which is occasionally present in urine containing a deposit of urate of ammonia. On heating this to the boiling point, the latter, "of course, soon disappears, and is replaced, as the ebullition continues, by a deposit which resembles albumen in being totally insoluble in nitric acid." And this statement is distorted by Dr Stark into the astounding assertion, that the urate of ammonia had been *converted* into incipient albumen. As a proof that such a change does not occur, I may remark, that on cooling, the urate of ammonia re-appears in the urine unchanged, and that this organic deposit occurs by boiling, even when the urate has been previously separated by filtering. This positive perversion of the statements of a fellow-labourer in our profession at once prevents my alluding to Dr Stark's chemical views, or of again noticing any criticism he may be disposed to make. Did he hold the highest position in the field of science, the tone of his criticisms would be at best discourteous, as it is, they are most unjustifiable.

Allow me to apologise for troubling you with these remarks, on a subject to which nothing shall again induce me to recur; and believe me to remain,

My dear Doctor,

Yours sincerely,

Golding Bird.

14 Middleton Square, London,
October 1, 1842.

Dr Cormack.

1. *Traité des Maladies des Reins, et des Alterations Urinaire, étudiées en elles-mêmes, et dans leurs ra Maladies des Uretères, de la Vessie, de la Prostate &c.* *Par* P. RAYER, *Médecin de l'Hôpital d* Paris, 1840.
2. *Séméiotique des Urines: ou Traité des Alterati dans les Maladies; suivi d'un Traité de la Mala aux Divers Ages de la Vie.* *Par* ALFRED BECQ *en Médecine.* Paris, 1841.
3. *An Inquiry into the Nature and Pathology of Gr of the Kidney, and its Mode of Action in producii Urine.* *By* GEORGE ROBINSON. London, 1842.

URINARY PATHOLOGY has in the present day assume development, and is apparently that department of dicine, which, from the interest attached to its rec tracts especially the attention of the profession; jus tion engrossed so much of the investigating talent period. In the course of this article, we shall end before our readers such a sketch as may display som important advances which our art has *recently* mad of research. But we deem it useful as well as curi previously to the history of urinary pathology, and progress of discovery to the present time. This mirably adapted to show the value of the resources physical sciences to the physician, and by displayin march of improvement, to repress the rude and vai

ease, chiefly from the historical details of the authors just cited, who have entered minutely into this subject. The second part of the article shall be devoted to the symptomatology of the urine. In the third part, we shall speak of the characteristics of the works reviewed, and of some peculiar views of their authors.

1. *Of the History of Urinary Pathology, &c.*—Attempts to diagnose disease from the urine might be traced in the obscure and semi-fabulous records of Indian and Egyptian medicine, (*Sprengel, Histoire de la Médecine, par Jourdain*, t. i. p. 80.) Omitting such crude efforts, we pass to the views of the Hippocratic writers on the subject of urinary pathology. These views are worthy of great attention, because they continued to influence pathologists down to the period when chemical analysis was applied to the study of the urine, and are to be traced but little modified, in the writings of Bellini, and even in those of Boerhaave.

The mode in which the examination of the urine came to be regarded of so much value by the Hippocratic school, is well explained by Becquerel, (sect. 2, c. 1.) The symptomatology of the urine is essentially connected with the general Hippocratic theory of disease; and thus the variations of this fluid, real or supposed, form one of the most important portions of the ancient pathology. We may remind our readers, that the Hippocratic school attributed disease to an irregularity in proportion of one or more of the four humours,—blood, bile, atrabile, and pituita; or of one or more of their fundamental properties,—hot, cold, dry, and moist. The due proportion of these constituted the *crasis* or health, while an excess of defect occasioned *dyscrasis* or disease. From the *dyscrasis*, a morbific matter was supposed to result, capable of exciting an effort on the part of the system to expel the poison. An acute disease passes through three stages, —*crudity*, *coction*, *crisis*. The morbific principle is comparable to an undigested aliment, and must be submitted to a series of actions, having for its object assimilation, or expulsion, or both. *Crudity* exists in the first part of acute fever; there is *coction* where the morbific matter is partly assimilated, partly rendered moveable; and if in consequence of this mobility, internal movements push the poison towards some emunctory, then it is evacuated in the form of sweat, expectoration, *urine*, stool, hemorrhage, or abscess. When the morbific matter is wholly assimilable, there is solution without evacuation. When the whole or a part is expelled, the evacuations are the result of a state called *crisis*. In every disease, where heat plays a principal or secondary part, there is strife between the morbid heat and the natural heat. If the former get the better, there is combustion of the humours; if the latter be successful, coction may take place.

Now, the urine was supposed to afford faithful evidence of the state of the humours as to coction.

By attributing the coloration of the urine in disease to blood, bile, atrabile, and pituita, and to the modifications of the fluids produced by the excessive heat of the viscera, most of the phenomena which the urine presents were explained. Red urine owed its colour to a hot and semi-digested blood; an adust blood or burnt bile would give rise to a black urine, *i.e.* urine containing an excess of colouring matter of the bile. Urine strongly charged with chemical matters, but tinged of a greenish hue, was called urine of coction; and here the bile was supposed to play the principal part,—either a bile engendered in the stomach from the crudity of the humour, or a burnt yellow bile. When the excretion in question was of a golden colour, it was supposed to owe its tone to the heat of the viscera. Thin and pale urine announced that nature had not yet commenced her combat with the peccant humours. Blue and pale urine was indicative of coldness in disease. The speedy or slow deposit of uric acid sediment showed either that coction was about to begin, or that nature had not yet commenced her work. "In the eyes of the ancients," says M. Becquerel, "the variations in the substances contained in the urine, depend in general on the manner in which the *flatuosities* are engendered and mixed, and the peccant matters form a couch so much the more superficial as the *flatuosities* are abundant. It naturally results that the contents should have a better signification, as the deposits are more profound. The *hypostasis*, (sediment), should then indicate a perfect coction, since it can only result from the absence of *flatuosities* and *crudities*;" but for an unexplained reason, only the white equal and united *hypostasis* had this signification.

The colours of the hypostases were explained like those of the urine.

In our opinion, the most valuable portion of the Hippocratic doctrines on morbid states of the urine are those with regard to the signs which this fluid affords in acute diseases, (*Aph.* 69 *et seq.*, sect. 4.) The statement of the evidence afforded by the appearance of the urine in local diseases of the bladder and kidneys (*Aph.* 74, *et seq.*, sect. 4.), and the very remarkable assertion, "Quibus vero in urinis bullæ superstant renum affectiones significant et longam fore invaletudinem," (*Aph.* 34, sect. 7.)

Meagre as are the details thus given, deficient in the elements of correctness and value, they yet exhibit nearly all the progress which pathology could make in this direction, independent of the resources of chemical and microscopic analysis. These details were repeated, commented on, and somewhat amplified by Alexandrian, Roman, Greek, and Arab writers, down to the time of Actuarius, who flourished at Constantinople in the reign of

Andronicus Paleologus the second, whose work on the urine "exposes, in so complete a manner, all the differences of this fluid, and the signs that it can furnish, he pursues the details so minutely, that we may regard it as the best of all those transmitted by the ancients," (*Sprengel*, t. 2, p. 243.) Rayer remarks, as an instance of the blind and slavish deference paid by succeeding writers to the dicta of Hippocratic physicians, that nearly all the former have repeated after the latter the fiction of the thickness and turbidity of the urine in children during health, and that its transparence is to be regarded as an unfavourable sign.

The barbarous practitioners of the middle ages pushed the pretended art of diagnosing from the urine to an extraordinary length. Thus, at the court of the princes of Germany, the chief physician was compelled to make an examination of his sovereign's urine every morning. (*Sprengel*, t. 3. p. 164.) Towards the middle of the 16th century, the study of the Hippocratic writings, which accompanied the revival of letters, militated against the art of uroscopy. Forestus, in particular, showed that, in many diseases, the urine gave fallacious tests, but even the rules which he gives for rendering this fluid a safe guide, show how far the peculiar notions of the time influenced him. "Regard should be had to the temperament, the age, the season, circumstances which all powerfully affect this secretion. The vessel in which the fluid is received should be sufficiently deep to allow the sediment to form properly. He cites also, from his own experience, showing how necessary it is for the physician to see the patient from whose urine he is to form his prognosis." Being called to a person whose urine appeared in the ante-room to be clear and limpid, he observes, that from this he could never have suspected the existence of an acute fever, from which the patient suffered. But when he had observed the intensity of the disease, the state of the urine enabled him to prognosticate an approaching delirium, and its termination in death. (*Sprengel.*) This prognosis was formed, we presume, upon the Hippocratic notion of the urine exposing the state of the humours as to coction, and also on the aphorism, "quibus urinæ pellucidæ, albæ, malæ, maxime autem in phreniticis observantur." Most of the writers of this period regarded the urine as a better sign than the pulse.

The extraordinary doctrine of Paracelsus with regard to *tartar*, may be deemed a theory of the origin of gouty and calculous affections. Tartar was the cause of all the diseases which result from thickening of the humours, rigidity of the solids, or the accumulation of earthy matter. The term *stone* is only applicable to one species of this affection, which he calls tartar, because it burns the body like hell-fire. The deposit of tartar was owing to the violent or irregular action of the *archeus* or vital principle.

His chemical notions with regard to the nature of tartar were very crude. Inspection of the urine is not enough to ascertain whether this fluid contains tartar;—chemical analysis must be had recourse to. The urine he regarded as external and internal; the former kind comes from aliments and drinks, the latter from the blood. The sediment was called *alcola* by Paracelsus, who describes three species—*hypostasis*, *divulsio*, and *sediment;* the first refers to the stomach, the second to the liver, the third to the kidneys, and tartar predominates in them all. (*Sprengel*, t. iii. p. 320.)

The notions of the followers of Paracelsus, and of the iatrochemists, on the subject of urinary pathology, are but little worthy of notice. Towards the end of the seventeenth century, two very different schools of medicine were in existence,—the intromathematical school, of which Pitcairn and Bellini, and afterwards Cheyne, were disciples; and the empirical school, of which Sydenham may be regarded as an illustrious member. The intromathematical physicians paid most attention to urinary pathology. The work of Bellini (*De Urina, Pulsu, &c.*, Franc. et Lips. 1718), forms an intermediate step between the ancient and modern pathology of the urine. His researches exhibit the commencement of the application of chemical research to the study of this fluid, while their author still retains the Hippocratic notions. He describes the phenomena attending the evaporation of the urine, and found that, by acting with water on the residue, the state of the urine, at various stages of the evaporation, could be imitated. (*Op. cit.*, p. 6.) Nevertheless, after giving the vague chemical notions of the constitution of the urine then entertained, as that it contained water, salt, earth, or tartar, a little sulphur, and that the saline matter was of a composite nature, he doubts whether *certum sit* "quicquid per operationes chymicas educitur e corporibus exstitisse in iisdem quale educitur." It is rather amusing to find the same argument brought *then* against the application of chemical research to physiology and pathology, which is now employed in our day. His notions of the importance of the states of the urine as signs of disease are extreme. "Hujusmodi autem liquidum quod urinam dicimus exeo ad rem medicam pertinet, quod per ejus inspectionem non levi conjectura judicamus, aeger ni sit, an sanus, cujus urinam inspicimus, siquidem aeger, quo ægrotet morbi genere, quanto tempore ægrotaturus sit." Nevertheless, he reprobates the abuses of this mode of determining physiological and morbid states, "quam inanes sint jactatores illi, qui ex sola urinarum inspectione nunquam visis iis quorum urinae sunt, divinare se posse asserunt, nunc ille cujus urine affertur æger an sanus sit, sit vir an mulier, senex an juvenis." He includes the sound which the urine makes in

falling, among the diagnostic marks of this fluid. (*Op. cit.* p. 3.) His general doctrines are taken from the Hippocratic urinary pathology.

Boerhaave, in his treatise *de Urina ut signa*, has added nothing to the previous knowledge of the subject. He scouts the vulgar uroscopy, "Vidi ante multos annos duos Professores Leidenses cum sua ουροσκοπια turpissime delusos, cum ex actis regulis noblissimæ matronæ graviditatem negarent; infans autem in lucem prodeum prophetis silientium imponeret."

Towards the close of the eighteenth century, while the progress of solidism caused the neglect of the ancient urinary pathology, the prodigious improvements in chemical research led to a better knowledge of the healthy constitution of the urine, and finally to very enlarged views of the changes undergone by this fluid in disease. Of all these results it is out of our power to treat; but in the second part of this article we shall endeavour to give a succinct account of the more recent and important discoveries; and now we proceed to the history of the researches into the nature of that disease, whose influence on the character of the urinary secretion is so remarkable—the disease of Bright.

M. Rayer divides the history of researches into the connexion between anasarca and general dropsy and kidney disease into three classes:—*a*, those in which relations were observed between certain dropsies and renal disease; *b*, those in which albuminous urine and dropsies were connected; and *c*, those in which the relations between albuminous urine, certain dropsies, and particular morbid states of the kidney were made out.

a. According to Rayer, Hippocrates observed the existence of dropsies unconnected with the liver, and dependent on kidney disease. (*Rayer*, t. 2, p. 505.) This observation seems not to have been lost sight of, and is affirmed more or less by Galen, and subsequent commentators on Hippocrates. Aetius, in a very remarkable passage, says that individuals affected with hardening of the kidneys become in the long-run dropsical. (*Op. cit.* t. 2, p. 508.) Avienna treats distinctly of dropsy in connection with kidney disease, and endeavours to distinguish this species from ascites proceeding from liver affections. The writers after the revival of letters appear to have kept in view this idea of a distinction between dropsies, according to their derivation from the liver or kidneys. In Schenk, John Hesse relates what appears to be distinctly a case of Bright's disease. He had concluded, during life, from the state of the urinary secretion, and other symptoms, that the dropsy which existed depended on the kidney; and on inspection of the body, "dexter renomnem amiserat colorem ut albam haberet carnem." (*Op. cit.* t. 2, p. 511.) Bonet relates a similar case, which he compares to the former. These observations were made in the seventeenth century. Boer-

haave and Morgagni recognized the connection between kidney disease and dropsy, and the latter appears to have described the granulations of Bright. (*Op. cit.* t. 2, p. 521. *Morgagni, De Sed. et Caus. Morb.*, epist. 38, art. 19.) Hoffman states the distinctive characters of the urine in ascites and anasarca, and relates a case of dropsy apparently consecutive on albuminous nephritis. (*Rayer*, t. 2, p. 521.) Sauvages admits an *anasarca urinaria* proceeding from suppression of urine. In 1826, Andral, in his *Clinique Médicale*, related a case of dropsy, where the only diseased organ was the kidney, whose granular appearance is well described. He asks, "had this particular alteration of the kidney obstructed the secretion of urine, and thus contributed more or less directly to the production of the dropsy?" M. Barbier of Angers described similar cases.

b. The history of researches into the connection between albuminous urine and certain dropsies, commences from a comparatively recent period. Towards the close of last century, Cotugno observed that the urine was coagulable in a case of dropsy, and attributed this phenomenon to the escape of the dropsical fluid by the urinary passages. Cruickshank, employing the tests of nitric acid and heat, found the urine to be coagulable in some cases of dropsy, and not in others. Wells (whose researches commenced in the last two years of the eighteenth century, and were extended to 1812) detected albumen in the urine in 78 out of 138 cases of dropsy. This coagulable state of the urine was accompanied with pains of the loins; and in some of the cases he recognised the existence of hardened kidneys, containing albuminous deposits, with diminution of the cortical substance. But he did not perceive the essentiality of the connection between this morbid state and the coagulability of the urine. Wells also determined the almost total absence of coagulability of the urine in 104 non-dropsical patients. Brande (1807) observed the diminution of the amount of urea in the urine in a case where this fluid was albuminous. Many of these observations were confirmed about the same period in France by Séguin, Fourcroy, and Nysten. Blackall, in his well-known work, applied the idea of Cruickshank and Wells, and classified dropsies according to the state of the urine with regard to coagulability. He relates 31 cases of dropsies, with non-albuminous urine, and 51 cases in which this fluid was coagulable. Blackall, like Wells, observed many cases of lesion of the kidney in dropsies, but left the connection between these lesions and the presence of albumen in the urine for future investigation. The next remarkable stage in this investigation is formed by the announcement of Alison in 1823, that in cases of dropsy with coagulable urine, he had found the kidneys hardened and irregular on their surface.

c. Dr Bright, in his reports of medical cases, (1827), was the

first who clearly and distinctly stated a connection between dropsies and certain alterations of the kidneys attended with coagulable urine, which he considered as a pathognomonic sign. He showed that this state of the kidney might occur in connection with dropsy, when other organs were healthy or nearly so. He described three stages of the kidney degeneration. In the first stage the organ preserved its volume, was softer, mottled with yellow externally, yellow and grey internally. At a more advanced period of this stage, the kidney became hard and tuberculous externally. The second stage was that of granulation of the cortical part properly so called. Towards the close of this stage, the volume augmented. In the third stage the kidney became lobed, and of almost cartilaginous hardness. The mere softening of the organ without other alteration was sufficient to determine anasarca. The chemical characters of the urine in this affection were given according to the researches of Bostock,—presence of albumen, diminution of the specific gravity of the fluid, and of the amount of urea and salts. Bright admitted the occurrence of albuminous urine in some cases in health, which he regarded as an inexplicable anomaly. The tendency to inflammation and to secondary disorders during the course of this disease was insisted on by Bright. Two years after the publication of Bright, Dr Christison published some observations on the subject. To him we owe the confirmation of the presence of urea in the blood in this disease, which had been previously only suspected. He did not find quite the tendency to inflammatory affections stated by Dr Bright. The paper of Christison was succeeded by the extensive researches of Dr Gregory, which are chiefly valuable as ascertaining the complications and causes of the disease. Numerous English physicians have subsequently written on the subject.

In France M. Tissot, in 1833, gave an account in his thesis of the results then obtained by M. Rayer, who, in the course of his investigation, had discovered albumen in the urine in other diseased states of the kidney and urinary apparatus besides the specific lesions of Bright. He points out another morbid alteration, the yellow anemia of the kidney observed by Rayer. Constant (1834) showed that the disease might exist in children. Sabatier (1834) gave an explanation of the mode in which the albumen of the blood may pass into the urine. In 1835, M. Desir exposed the pathological views of Rayer, who describes six alterations of the kidneys, instead of the three related by Bright. In the first form the kidneys are often double their usual size, and injected; externally they are scattered over with minute red points; internally the glands of Malpighi are enlarged and injected. The tubular substance compressed between the swollen

prolongations of the cortical substance, which stretch between the cones, is redder and its striæ less apparent than in the healthy state. The mucous membrane of the calices is injected (*Rayer*, t. ii. p. 99-100.) In the second form the kidneys are softer and more lobed, and have a marbled aspect (*Op. cit.*, t. ii, p. 100.) In the third form the cortical substance is of a uniform pale rosy or yellowish tint, with here and there vascularities or ecchymoses or large whitish granulations (*Op. et loc. cit.*) The fourth form of Rayer is the granular species of Bright. The fifth form is chiefly characterized by the deposit as of little grains under the cellular tunic. In all these forms the kidneys are more voluminous than in the natural state. In the sixth form they may be preternaturally large or small, but are hard and present rugosities on the surface. There are few granulations on the surface, but on section some are discovered in the cortical substance. This is the third form of Bright (*Op. cit.*, t. ii. p. 102.) M. Desir also enumerated many inflammatory affections independent of kidney disease; where some degree of coagulability of the urine might be observed, (*Op. cit.*, t. ii. pp. 578—80.)

Martin Solon published in 1838. He remarked the passage of albumen into the urine in simple nephritis. In contesting the inflammatory nature of Bright's disease, he is thus replied to by Rayer, "I have never said, that none of my pupils have stated, that the disease of Bright was the same affection as that which constitutes simple nephritis."

The work of Dr Christison, published in 1839, appears to us especially remarkable for the clearness of its details and the admirable picture of the disease, its characters, symptoms, and causes, which the author has presented. M. Becquerel, in addition to a most minute account of the symptomatology of the urine in this and other diseases, has given us some details with regard to the characters of the disease in children. Finally, a question has arisen concerning the intimate nature of Bright's disease. Mr Robinson maintains that congestion of the kidney is alike the point of departure of simple and albuminous nephritis. The glands of Malpighi have been supposed to be the secreting part of the kidney, whose deranged function gives rise to the morbid phenomena of this disease. Nevertheless Valentin could not find any alteration of these glands in this disease, on a microscopic examination. Gluge, however, found those glands congested. The recent researches of Mr Bowman have paved the way for inquirers into this matter. He has shown that the glands of Malpighi are penetrated by capillaries, and that vessels leave them to be ramified on the uriniferous ducts, whence we cannot but ascribe an important place to any obstruction to the circulation at these glands, in deranging the secretion. To the

views of Mr Robinson we shall attend in the third part of this article.[1]

2. *On the Symptomatology of the Urine, &c.*—The facts and arguments brought forward in the recent work of Professor Liebig, (*The Application of Chemistry to Physiology and Pathology,*) appear to complete the chain of proof requisite to establish the *complimentary* nature of the function of the kidney as compared with those of the lungs and liver. The views of this chemist with regard to the principles resulting from the destructive assimilation of the tissues, are clear and decisive, and his conclusions, supposing the premises to be correct, are mathematically demonstrated. We pass over the statements of Dr Prout, to expatiate upon those of Liebig, because the latter chemist has had the advantage of the long labours of the former, and his more complete and bolder theories with regard to the part played by the kidney, or the principles which it excretes, are as yet scarcely known to the general professional reader; and because if these theories are correct, they will establish a harmony in our notions with regard to the physiology and pathology of the kidney. Our space will only allow us to epitomize the most important of Professor Liebig's views. We shall set out with reminding our readers, that in the lithate or urate of ammonia, which constitutes almost the whole of the urine of serpents, the azote has the same proportion to the carbon, as in the bicarbonate of ammonia, there being two equivalents of carbon for one of azote. Muscular fibre, blood, &c., contain eight equivalents of carbon for one of azote, so that in the destructive transformation of the tissues in these animals, at least six equivalents of carbon must have passed through the skin and lungs. In the higher animals, urea, a more nitrogenized product, is to a great extent substituted for uric acid, wherefore the respiratory functions must be more vigorous in order to get rid of the greater amount of carbon. In urea, the carbon and azote are in the same proportion as in neutral carbonate of ammonia, there being an atom of each. Liebig remarks, that had the excess of carbon and hydrogen been burned off in a furnace, the azote would still have appeared with part of the other elements as carbonate of ammonia. Nearly the whole of the bile disappears in the process of digestion; the chief constituents of this secretion being absorbed after they have played an important part in the assimilation of the food. Liebig shows, that although a man daily secretes from seventeen to twenty-four ounces of bile, the feces only amount to about five ounces, which

[1] The papers of Dr Barlow and Dr Addison in *Guy's Hospital Reports* are well worthy of attention, as giving the symptoms of affections of other organs which frequently accompany Bright's disease and other kidney affections. Irritation of the stomach, and a peculiar quiet stupor, will sometimes appear when other symptoms of kidney disease are wanting.

would only contain twenty-one grains of dried bile. The carbon and hydrogen of the bile are expired; the soda reappears in the urine, united with the acids formed by the oxidation of the tissues, or combined with some organic acids. *By subtracting the formula of bile, or of its essential constituents, from that of blood, which may be regarded as representing generally the constitution of the tissues, we obtain a formula which will represent the constitution of the essential principles of the urine.*

According to Playfair and Boeckman, the most exact chemical formula for flesh, *i.e.* for albumen, cellular tissue, fibrine, and nerve, is $C_{48}\ N_6\ H_{30}\ O_{15}$. Now, from the researches of Demarcay, the chief constituent of bile is a body analogous to soaps,—a compound of soda with a peculiar substance which has been named *choleic acid.* This acid is resolved by the action of muriatic acid into ammonia, *taurine*, and a new acid called choloidic acid, which contains no azote. When choleic acid is boiled with caustic potass, it is resolved into carbonic acid, ammonia, and another new acid,—*cholic acid*,—which must not be confounded with the cholic acid of Gmelin. The value of the formula for choleic acid is not altered, should choleic acid and choloidic acid turn out to be mixtures of different compounds.

Formula of Choleic Acid.—$C_{76}\ N_2\ H_{66}\ O_{22}$. Now, subtracting the products formed by the action of muriatic acid, from this formula, we obtain the empirical formula of choloidic acid.

1 atom taurine,	$C_4\ NH_7\ O_{10}$	} =	$C_{76}\ N_2\ H_{66}\ O_{22}$
1 eq. ammonia,	NH_3	} =	$C_4\ N_2\ H_{10}\ O_{10}$
Formula of choloidic acid,		=	$C_{72}\quad H_{56}\ O_{12}$

Again, subtracting the elements of urea and two atoms of water, (urea = $C_2\ N_2\ H_4\ O_2$), or two equivalents of carbonic acid and two equivalents ammonia, the remaining formula will give the composition of cholic acid.

2 eq. carbonic acid,	$C_2\quad O_4$	} =	$C_{76}\ N_2\ H_{66}\ O_{22}$
2 eq. ammonia,	$N_2\ H_6$	} =	$C_2\ N_2\ H_6\ O_4$
Formula of cholic acid,		=	$C_{74}\quad H_{60}\ O_{18}$

Now adding half the number representing the formula of choleic acid to the elements of the urine of serpents, we obtain the composition of blood, with the addition of an equivalent of oxygen and an equivalent of water.

½ equivalent of choleic acid,	=	$C_{38}\ NH_{33}\ O_{11}$
1 eq. neutral urate of ammonia,	=	$C_{10}\ N_5\ H_7\ O_6$
		$C_{48}\ N_6\ H_{40}\ O_{17}$

"If then we consider choleic acid and urate of ammonia the products of the transformation of muscular fibre, . . . there exist in proteine, with the addition of the elements of water, all the

elements essential to this metamorphosis, and except the sulphur and phosphorus (of fibrin), both of which are probably oxidized, no other element is separated."

It will be observed, that this explanation applies to the destructive transformation of the tissues in some amphibia and reptiles. In the higher animals, a large portion of the uric acid is replaced by urea; and it has been already shown how this change stands in close relation with the amount of oxygen consumed by the animal. The following simple formula will show how easily uric acid may be converted into urea, by a further abstraction of carbon.

1 atom of uric acid,	=	.	.	C_{10}	N_4 H_4 O_6
Add 4 atoms water and 6 atoms oxygen,	=				H_4 O_{10}
				C_{10}	N_4 H_8 O_{16}

Now, 2 atoms urea,	=	.	C_4	N_4 H_8	O_4
6 atoms carbonic acid,	=	C_6			O_{12}
		C_{10}	N_4	H_8	O_{16}

This statement of Professor Liebig would lead us to suppose that there is a possibility of the convertibility of the nitrogenized elements of the bile and urine. If to uric acid and urea we add a certain quantity of water, we obtain the nitrogenized products of the bile, already spoken of, viz. taurine and ammonia, and the addition of oxygen and the elements of uric acid may yield either taurine and urea, or taurine, carbonic acid, and ammonia.

Our space will not permit us to pursue further these views of Professor Liebig; and we may now ask how far the general physiological function of the kidney throws light on its general pathology,—on the relations which have been observed in disease between the lungs, liver, kidneys, and organs of primary assimilation, to which we shall confine ourselves. These relations have as yet been most imperfectly established. Magendie, after removing the kidneys in a dog, observed great increase in the amount of bile secreted. Diseased liver is one of the consequences of Bright's disease of the kidneys; at least Professor Christison is inclined to view the disease of the kidneys as, in general, prior to that of the liver in those cases; and to suppose the relation as something more than accidental. (*Christison on Granular Degeneration, &c.*, p. 104.) In some liver diseases, the secretion of uric acid is increased; and the occurrence of pink sediments is almost diagnostic of affections of this viscus. On the other hand, the amount at least of the urinary secretion is sometimes diminished in this class of diseases. But we are not aware that any connexion can yet be established between these variations of the urinary and biliary secretions in disease. Pulmonary affections frequently come on in the course of nephritis

accompanied with purulent secretion from the pelvis of the kidney or in the disease of Bright. When the urinary secretion is suppressed, desire to respire is more pressing. Rayer states that, instead of finding the kidneys more developed in those who have died of phthisis, as has been asserted, he has observed the reverse. In pneumonia there is large secretion of urates, but this is common in inflammation.

It is well known that derangements of digestion exert a powerful influence on the characters of the kidney secretion. Dr Prout has drawn a most important practical distinction between morbid states of the urinary secretion as indicative of diseases of the organs of primary or secondary assimilation. "The appearance of lithate of ammonia in the urine, as every body knows, is one of the most common attendants of slight dyspepsia from errors of diet, &c. But the lithate of ammonia appears in the urine also when no food has been taken into the stomach, and when, therefore, its formation can only be referred to secondary assimilation of the albuminous contents of the blood or albuminous tissues, as, for instance, in certain fevers and other severe constitutional diseases." But lithate of ammonia, we should conceive, can only have one source, the transformation of the tissues of the body in destructive assimilation. Thus Liebig denies that food can have a direct influence on the formation of urinary calculi. The only way in which an error in primary assimilation can affect the secretion of lithic acid, must be by the greater or less rapidity with which that secretion is allowed to go on, or by the action of some material taken up by the blood upon the lithic acid, or the process by which it is produced, or materials which have to produce it. If a too abundant supply of nutritious matter is carried to the organs, the process of secondary assimilation may go on with greater rapidity, the destruction of the old tissues being accelerated by the excessive quantity of new materials. And, in such cases, if the respiration be not more active than usual, an excess of uric acid will be excreted. The influence of an active life on the gouty and calculous diathesis is well explained by our chemical pathology. The views of Dr Prout, with regard to the derivation of lithic acid and urea, would render such explanations more complicated. He attributes the urea to the transformation of the gelatinous tissues of which it is the result along with lactic acid; and the lithic acid to the albuminous constituents of the system. But when we consider what a small proportion the uric acid, or the urate of ammonia of the urine, bears to the urea and lactic acid, and that the albuminous tissues far exceed the gelatinous, and are precisely those portions of the system which we should suppose must be most frequently renewed, as having apparently those functions to discharge which cause the *wear and tear* of

the organism, we cannot believe this attribution of the products of the metamorphosis of the tissues to be correct. A class of substances, such as sugar, oxalic acid, &c., may be formed in primary assimilation, which are capable of directly and materially influencing the state of the urine. And foreign matters introduced into the stomach might be absorbed, and more or less influence the urinary secretion. A remarkable instance of this is afforded by the alleged transformation of uric acid into hippuric acid, consequent on the administration of benzoic acid.

The special alterations to which the urinary secretion is liable are well displayed by the annexed table of M. Rayer.

Special Alterations of the Urinary Secretion.

Section 1st, Quantity.	Suspension of the secretion, (anuria).	
	Diminution of the secretion, (dysuria).	
	Augmentation of the secretion, (polyuria).	
	By diminution of one or more of the natural principles.	Of water aqueous diabetes.
		Of urea, diabetes with excess.
		Of urea.
Section 2d, Composition.	By augmentation of some natural principles.	Of uric acid—amorphous deposits—gravel and calculi.
		Of phosphates—gravel and calculi.
	By the presence of accidental principles of morbid formation, or introduced from without.	Carbonate of lime—gravel, calculi.
		Oxalate of lime—gravel, calculi.
		Silica—gravel, calculi.
		Phosphorus—luminous urine.
		Cystic oxide—gravel, calculi.
		Xanthic oxide—gravel, calculi.
		Xanthic acid—gravel, calculi.
		Alkaline substances—alkaline urine.
		Chyle—chylous urine.
		Sugar—diabetes mellitus.
		Morbid colouring matters — blue urine, black urine.
		Hair—hairy gravel.
	Mode of excretion—Uroplania. (?)	

This part of our subject may be conveniently arranged under two heads. *A*, alteration in the proportions of the normal elements of the urine, with some of their metamorphoses. *B*, presence of accidental and foreign substances in this fluid. Of course we must pass over many subjects of importance, in order to be able to do anything like justice to those that we select.

M. Becquerel has given us a better notion of the normal state of the urine than we before possessed; and has established a more accurate method of recognising the deviations from this state. The effects of drink and aliment upon this secretion, have been long observed; and the distinctions between the urine passed after a large ingestion of fluids, the urine which follows digestion, and the urine of the blood, or more properly of secondary assimilation, are of great importance in the study of diseased

states of this fluid. Now, considerable confusion has arisen from the want of sufficient attention to the changing characters of the secretion. Thus, in the celebrated analysis of Berzelius, the urine is represented as containing a much larger amount of solid principles, than M. Becquerel finds in it on mixing all the urine voided in the 24 hours. Doubtless, Berzelius had taken the morning urine as a specimen, but he has not said so. There is even a difficulty attendant upon the method of getting together all the urine passed in the 24 hours, and analyzing the mixture; for a deficiency in the secretion of one day may be counterbalanced by an excess in that of the next. Lecanu got together the secretion of 8, 10, or 12 days; then dividing the total product by 8, 10, or 12, he got the mean of the urine in 24 hours. But this cannot be done where it is requisite to watch the variations in the secretion from day to day, in order to trace the progress of a disease.

"I must lay this down at first as a general principle," says M. Becquerel, "that urine passed in the space of 24 hours, like that emitted in the morning by the same individual, has never the identical composition of that of the evening before, of the next day, or another day; in a word, the mean of each chemical element is never absolutely the same; it oscillates within limits which are in general slight, but nevertheless may become considerable. Thus M. Lecanu has found, that in man the urea secreted in the space of 24 hours, may oscillate between 22·446 grammes, and 9·119; and in woman between 17·983, and 9·881. . . . All the analyses which I shall give, will be at the same time considered under two different points of view, which, however, are deduced from one another. Thus, I shall give at first the composition of the whole of the urine emitted in the space of 24 hours, which will permit the determination of the mode in which it differs from the healthy urine considered as the type. Then this analysis will be reduced to the proportions in 1000 parts." We annex the tabular view of the composition of healthy urine given by M. Becquerel, retrenching a minute portion of no practical value. It will be understood that his unit is the gramme = 15·434 grs. Troy.

This Table indicates the mean composition of the urine in man and woman at the normal state, and the mean deduced from this addition. This Table is constructed from the results of the analyses of eight healthy urines, four of men and four of women.

Chemical Elements contained in the Urine.	Men.		Women.		General Mean.	
	Urine of the 24 hours.	Composition on 1000.	Urine of the 24 hours.	Composition on 1000.	Urine of the 24 hours.	Composition on 1000.
Quantities of Urine,	1247·3	1000	1371·7	1000	1319·8	1000
Density,	1018·900	...	1015·120	...	1017·010	
Water,	1227·779	968·815	1337·459	975·052	1282·636	971·935
Other matters than water furnished by direct evaporation,	39·521	31·185	34·211	24·948	36·866	28·066
Urea,	17·537	13·838	15·582	10·366	16·555	12·102
Uric Acid,	0·495	0·391	0·557	0·406	0·526	0·398
Fixed salts, and undecomposable at a red heat:— Chlorides, Phosphates, Sulphates of lime, of soda, of potass, of magnesia,	9·751	7·695	8·426	6·143	9·089	6·919
Organic matters which cannot be isolated and saturated separately, Lactic acid, Lactate of ammonia, Colouring matters, Extractive matters, Muriate of ammonia,	11·738	9·261	9·655	8·033	10·696	8·647

To this Table, M. Becquerel adds a more minute account of the composition of the saline matters, which we omit. The estimates of the amount of urine rendered daily, vary, according to previous inquiries, from 21 ounces to 57, (Rayer.) Haller says 49.

The following are M. Becquerel's general conclusions with regard to normal urine. The calculations are made on the 1000 parts of the urine of 24 hours.

"1. At a given degree of density, such as 1017·010, the sum of the matters yielded by evaporation, and the amount of the water, will not sensibly change, because the density is the expansion of this quantity.

"2. The urea which is designated under the mean of 12·102, may vary between 15 and 10, without one having the right to conclude that there is alteration from the normal state.

"3. The uric acid stands for 0·398; it might vary from 0·3 to 0·5, without one being able to conclude that it was beyond the physiological limits.

"4. The quantity of salts indicated by 6·919, may oscillate between 6·0 and 8 or 9, and we shall yet be in the physiological state.

"5. The organic matters may vary from 8 to 10, without the physiological limits being surpassed; and we may have these variations, the density remaining the same."

The analysis of healthy urine by Lecanu gave nearly the same results as those of M. Becquerel, for being calculated for urine of sp. gr. 1017·010, and for 2000 parts, the proportions are,—

Water,	973·975
Urea,	13·075
Uric acid,	0·410
Fixed salts, and undecomposable by heat,	10·067

Now, Berzelius found 30·10 parts of urea in the 1000, and 15·29 of salts undecomposed by heat. The density of the urine which he experimented on is not stated.

A, the water of the urine, is the first constituent with whose alterations we have to do. According to M. Becquerel, the amount of water is abnormal, when it is less than 800 grammes, or more than 1500 in the 24 hours. The quantity of water is liable to be affected by many causes,—a vegetable diet, according to Magendie, increases it. It is remarkably increased in some well-known affections; sometimes temporarily in hysteria, although the reverse is often the case in this affection. Cold in general increases its amount; intestinal fluxes and abundant sweats diminish it. In anemic diseases, although the quantity of water secreted in the 24 hours be diminished, its *proportion*, in comparison with the other principles of the urine, may be increased. This is the case in Bright's disease. In fevers, in acute and chronic phlegmasiæ, the water is often diminished both on the whole and in relation to the solid constituents.

The solid principles of the urine may vary between 36 and 41 grammes daily in man, and remain in the normal state. In woman, the limits are 32 and 36, (Becquerel.) The introduction of much nutriment into the system leads to an increase of the solids; and it seems that even much drink will augment the total amount of solids excreted, although it increases the quantity of water in a much greater degree. Upon the same principle, M. Becquerel accounts for an increase in the solids discharged, which he has observed in polydipsia and some cases of chlorosis. As a general rule, the solid matters are oftener diminished than increased in disease. This is remarked in many inflammatory diseases, and in almost all chronic and debilitating affections.

The urea is the most important of the solid principles of the urine, and may be regarded as the essential or characteristic constituent of this excretion. The variations and modifications are, consequently, of the greatest importance. For the processes

by which urea may be obtained and its proportion estimated, we must refer to the various works on such subjects. The best mode of estimating the amount of urea is by obtaining the nitrate of urea, which in 100 parts contains 48·938 of base, and 7·281 of water. An easy process of ascertaining whether urea exist in urine is given by Rayer, who directs us to put a drop of urine on a plate of glass. "In a few minutes, especially in summer, the urine is sufficiently evaporated for a drop of nitric acid (when the urine contains urea) to determine the formation of a magma or white brilliant crystalline mass of nitrate of urea. In winter the drop should be evaporated by a gentle heat; this takes place in two or three minutes. When we submit to the microscope the magma obtained after the addition of nitric acid, it offers a crystallization, and the less thick, white, and brilliant plates, although apparently confused, offer always beautiful needle-form crystals of nitrate of urea.

As a general mean, according to M. Becquerel, the amount of urea voided in health may vary in the twenty-four hours from 15 to 18 grammes. The same author states, that the amount of urea excreted in the twenty-four hours rarely exceeds the normal standard; the diminution of this principle in disease being the more common rule. It is diminished in febrile diseases, in diseases of debility, by the action of exhausting remedies, remarkably in Bright's affection; but in this disease its diminution coincides with that of the other solid principles, and occurs, according to M. Becquerel, *not because there is lesion of the kidney, but as a consequence of debility.* (*Séméiotique des Urines*, p. 506.) Hysteric urine and the disease called diabetes inspidus offer examples of diminution of urea along with other solids in proportion to the amount of water. Dr Prout has described a disease in which the leading character is excess of urea with increased specific gravity of the urine. Many of the causes which seem to occasion this disease are analogous to those of diabetes; but the symptoms are of a much less formidable character:—frequent desire to make water, an uneasy sensation about the neck of the bladder, sense of weight in the back, disinclination to exercise, and dyspeptic symptoms, with more or less uneasiness in the assimilating organs; and neither remarkable thirst nor craving for food, nor emaciation.

Whenever the urine becomes alkaline, unless from the ingestion of alkaline substances, this change is owing to a decomposition of urea. This principle has the same elementary composition as the cyanate of ammonia or the anhydrous carbonate of ammonia, minus two atoms of water:—

$$C_2\,N_2\,H_4\,O_2 = C_2\,N\,O + N\,H_3 + H_0 = C_2\,O_4 + N_2\,H_6 - H_2\,O_2$$

By absorbing the elements of two atoms of water urea is trans-

formed into carbonate of ammonia, according to the formula:— $C_2 O_2 N_2 H_4 + 2 Ho = C_2 O_4 + N_2 H_6$. This transformation is facilitated by the presence of animal matters. When urea is decomposed in the urine, this fluid becomes first neutral, then alkaline; the subcarbonate of lime is formed and deposited; the phosphate of lime, no longer held in solution by an acid liquid, is also deposited. The ammonia, which has lost its carbonic acid, transforms the acid phosphate of magnesia, into the neutral or bibasic ammoniaco-magnesian phosphate which crystallizes. While the urine is yet acid, the decomposition of excess of urea may, on the application of heat, give rise to phenomena which might lead to a supposition of the existence of albumen. On bringing such urine to the boiling point, it sometimes becomes dull and opaque, and an abundant white deposit takes place. This substance is entirely constituted by subcarbonate of lime, and sometimes by subcarbonate of magnesia, from which the heat has removed the excess of carbonic acid which kept them in solution. To distinguish the nature of the precipitate, an acid or the microscope should be employed. When the microscope is used, the amorphous nature of the deposit causes it to be distinguished from the granular and cloudy aspect which albumen presents. We owe this observation to M. Becquerel. Dr Willis has endeavoured to show how the various morbid elements of the urine may be formed by the transformation of urea. In this way he accounts for the presence of excess of lithic acid, and for the existence of lithic oxide, cystic oxide, &c., and is even inclined to attribute the albumen in the urine sometimes to this source. We have already spoken of the relation between urea and uric acid. Dr Golding Bird, in his recent papers in the *Medical Gazette*, gives excellent reasons for believing that oxalic acid, which he shows to be a much more common ingredient of the urine than has been supposed, may owe its existence to this transformation of the urea, or, as Liebig supposes, the uric acid. By adding one atom of uric acid to four atoms of water and three of oxygen, we obtain the elements of two atoms of urea and three of oxalic acid; and by adding two atoms of urea to four atoms of water, we obtain two atoms of oxalic acid and four atoms of ammonia.

Although uric acid and its salts form such a small portion of the substance held in solution in the urine, their variations and changes are of considerable importance from the signs of internal disease thus furnished, and from the formidable affections of the system or of the urinary organs which may ensue.

The mode of existence of uric acid in urine, has given rise to much dispute. Dr Prout maintains that it is in solution in the form of the acid urate of ammonia. His opinion is supported by Rayer and M. Donné; while M. Quevenne, Davernoy of Strasburg, and others, assert that this substance exists in some state

of combination with colouring matter, or with some animal principle, which enables it to be held in solution. The arguments on both sides appear to us doubtful. M. Becquerel, siding with Quevenne, conceives that the circumstance of uric acid being seldom deposited from urine, in the peculiar crystalline form of this substance, but in an amorphous state, is owing to the acid being combined with a peculiar animal matter. The amount of ammonia in uric acid sediment is certainly exceedingly small. Dr Prout asserts that these sediments are composed of acid lithate of ammonia mixed with a small quantity of alkaline urates. Becquerel brings the following argument forward as decisive,—"collect these sediments from acid urine, place them on a filter, and wash them successively with cold distilled water, and cold alcohol, you will then remove the greater part of the foreign matters; examine the residue with the microscope, you will have only an amorphous powder; treat this matter with a small quantity of nitric, or still better, of hydrochloric acid, which neither dissolves uric acid nor the urates at the ordinary temperature; in general there will be no change, the matter will remain amorphous as previously; and nevertheless if it had been composed of acid or earthy urates, there can be no doubt but the nitric or hydrochloric acid, being more powerful than the uric acid, would have obtained possession of the base, and allowed the uric acid to crystallize." M. Donné, on the other hand, observes, that while the uric acid sediments are dissolved again in the urine by an elevation of temperature, pure uric acid is not so redissolved. According to M. Quevenne, this fact is as easy of explanation as the original solution by means of the combination with colouring matter. Further, M. Donné contradicts exactly the fact alleged by M. Becquerel, and asserts that the addition of nitric acid transforms the amorphous mass into an aggregation of beautiful crystals of uric acid, (*Rayer*, t. 1, p. 92.) Dr Prout employs on his side of the question a physiological argument, viz. the secretion of uric acid in the form of lithate of ammonia by the lower animals. The precipitation of lithic acid from the urine by so weak an acid as the carbonic, may also be cited in favour of his view. Uric acid may be estimated roughly by adding a small quantity of muriatic acid to the urine, and collecting the precipitate, after allowing the fluid to remain for twelve hours. If the urine be albuminous, the easiest mode is to use acetic acid, which does not precipitate the albumen. A more minute analysis requires a more complicated process. Pure uric acid crystallizes in rhomboidal plates, or if the precipitation takes place slowly, in little quadrilateral tables. According to M. Duvernoy, if the quantity of uric acid is proportionally less than that of colouring matter, the uric acid is slowly deposited, and takes the crystalline form, while, if it be in excess, it is deposited as an amor-

phous powder. This is contrary to the experience of M. Rayer, (*Op. cit.* t. 1, p. 96.)

As a general physiological mean, according to Becquerel, the amount of uric acid secreted in the 24 hours may vary between 0·4 and 0·6 of a gramme.

The same author asserts that those cases of disease in which the amount of lithic acid secreted in the 24 hours is augmented, are precisely the same as the cases in which the urea remains about the normal standard, or but slightly diminished, and where the water is reduced one-half. These are febrile affections, general functional disorders and diseases of the liver. The mean of eleven illustrative cases gives an augmentation of the uric acid to about double the normal quantity, a sp. gr. of 1021·656, and a diminution of water to a half or thereabout. In anemic diseases, where this principle is diminished, the breaking out of some general functional disorder, which causes much irritation, leads to a temporary augmentation. In some diseases of the same character, the uric acid may appear to be increased from the great relative diminution of water. But generally in adynamic diseases, the uric acid is diminished both as to the whole amount secreted in the 24 hours, and in relation to the quantity of water.

The quantity of uric acid may be greatly affected by remedies; it is now well known that in cases of gout, rheumatism, &c., the administration of colchicum will cause an enormous amount of this principle to be excreted,—an instructive fact in the treatment and pathology of these diseases, and which causes us to recollect the doctrine of *Tartar* of Paracelsus. Uric acid is secreted in greater quantity from a highly animalized diet, and generally from the same physiological cause as urea. Dr Prout has furnished us with some most valuable remarks on the characters of uric acid sediments, and their value as diagnostic marks, although his views with regard to the chemical constitution of these sediments, and the modes in which their colours are produced, be liable to dispute. Yellow sediments are regarded by him as those of health, or at least comparatively so, since they are liable to be produced in dyspeptic individuals by slight errors of diet. Red sediments usually indicate the presence of feverish or inflammatory action in the system, and the symptoms are in general intense in proportion to the depth of the colour. Persons whose urine habitually deposits sediments tending to red, are naturally of an irritable feverish habit, and are apt to be affected by the slightest cause, as a chilly state of the atmosphere, &c. They are often subject to gout and rheumatism, in which diseases, more than any others, these sediments may be seen in their most marked forms. Pink sediments usually indicate the presence of chronic visceral affections, especially of diseases of the liver. In hectic or irritative fever the sediments often vary between red and pink.

An excess of lithic acid appears to be accompanied by excess of another organic acid, the lactic. This latter acid is the source of the acidity of the urine, and is asserted by Prout to be the chief agent in the precipitation of lithic acid.

Of the various conversions to which uric acid is liable, one of the most important is, that by which it is changed into murexid or purpurate of ammonia by the action of nitric acid, the secretion of which is supposed by Prout to take place in some diseased states of the kidney, and to account for the deep coloured sediments sometimes observed.

Uric acid may be changed by the absorption of an atom of oxygen from peroxide of lead, into oxalic acid, urea, and allantoin, according to the formula.—$C_{10}N_4H_4O_6 + PbO_2 + 3\,HO = C_2N_2H_4O_2 + 2\,PbOC_2O_3 + C_4N_2H_3O_3$.

According to Becquerel, the inorganic salts of the urine may vary between eight and ten grammes in the twenty-four hours as the general mean for men and women, and remain within the healthy standard. His observations on the variations of these substances in disease may be thus summarily disposed of. In febrile diseases, affections of the heart and liver, and functional disorders, the total amount of the salts secreted is generally diminished, and the amount of water is diminished, in a greater ratio, to a half. In anemic diseases, chlorosis, &c., the salts are greatly diminished, say a half, while the water is lessened by about a fifth. In the first set of cases, where a cause of debility is joined to the disease, the diminution of salts is more considerable; that of water less so. Again, in some febrile affections, apparently of a slight character, the salts have been found diminished to less than a half, while the water has remained of the normal amount. Cases of polydipsia and chlorosis are given where the salts are nearly normal, but the water increased. In all these cases the urea bears a relation to the salts, and the same is observed in Bright's disease of the kidneys. M. Becquerel furnishes us with nothing on the subject of urine largely charged with phosphates. But on this part of the subject Dr Prout has left little to be said.

The most important of the organic principles in the urine, not already mentioned, is the lactic acid. It exists both free and in combination with ammonia, and most probably holds the phosphates of lime in solution as well as the ammoniaco-magnesian phosphates; and also combines with the urea forming a lactate of this base. Here, too, M. Becquerel adds nothing to the labours of Prout. As a general rule, the alterations of colouring matter accompany those of the uric acid.

B. Of the organic and inorganic principles which may be met with accidentally in the urine.

These principles are of two classes, viz., those which are the

simple result of the spontaneous decomposition of the chemical elements existing normally in the urine; and those which have no analogy with the substances normally existing there. To the former class we have alluded, in speaking of the transformations of urea, and the actions to which the formation of carbonate of ammonia may give rise. Of the substances of the second class we shall only refer to pus, mucus, the various albuminous principles of blood and chyle, and sugar.

A difference of opinion exists as to the characters by which pus and mucus are to be distinguished in the urine. This arises chiefly from a difficulty as to whether globules exist in the mucus of the bladder. From what is urged on this point by different authorities, we should conclude either that globules, which cannot be distinguished from those of pus, exist in small quantity in the vesical mucus, or that the pus globules may be formed from such slight causes, and increase in number so gradually, that only the greater or less abundance of such globules can entitle us to decide. The proportion which the epithelial scales bear to the globules, should, under such circumstances, furnish the best microscopic character. The chemical characters of pus and mucus are well compared by M. Becquerel; and the following small table is valuable:—

Mucus.	Pus.
1. Viscosity.	1. Viscosity and greater consistence.
2. Transparence or slight opaline tint.	2. Completely opaque and yellowish white.
3. Neutral.	3. Alkaline.
4. Small quantity of fatty matter.	4. Fatty matter more abundant.
5. Very feeble augmentation of viscosity by ammonia.	5. Treated by ammonia it yields a gelatinous mass.
6. Carbonizes at the spirit lamp, or only gives a slight flame.	6. Burns with a vivid flame at the spirit-lamp.

Rayer has sought in vain for a case where the kidney can remove absorbed pus from the body.

The presence of blood in the urine gives this fluid the colour of the blood, introduces albumen, recognisable by its proper tests, renders the urine alkaline; and a microscopic inspection will shew the blood globules.

For a knowledge of the curious state termed chyloserous urine, we are chiefly indebted to the researches of Dr Prout. In this modification the urine is distinguished by its white appearance, and by its property of undergoing spontaneous coagulation. "When the urine is quite white and opaque, the whole coagulates into a tremulous mass like blancmange, and assumes the shape of the vessel into which it is passed." The coagulum, especially if removed, generally separates into two parts,—a serous portion like the urine itself, and a delicate fibrinous mass frequently more or less

of a rose colour, from the presence of colouring matter like that of the blood. In this curious affection, the opalescent tint is given by an oily matter, the albumen present is not that of the blood, but the less perfect albumen of the chyle. The disease is common in hot climates, and is accompanied with fewer constitutional symptoms than, *a priori*, would be supposed possible,—a dyspeptic, febrile, and irritable state, with pain of the loins and torpidity of the bowels being the most urgent symptoms. On inspection, in one of the cases the kidney was found healthy. Dr Prout attributes this affection to mal-assimilation, by which the chyle is not raised to the blood standard and is ejected through the kidneys. But, in most of the cases, the kidneys must also be more or less at fault; for he has detected chyle in the blood when it was not voided by the urine. Therefore there must be a suspension of the disorganising functions of the kidneys. This curious state of the urine is worthy of attention, not merely in itself, but in order that it may be distinguished from the ordinary albuminous state which indicates lesions of a character so much more formidable.

Besides chyle there can be no doubt that fat may also occasionally find its way into the urine, where of course its presence is easily detected.

Albumen may be present in the pus or mucus existing in urine, in the blood which may pass into this fluid, in the chylous urine already spoken of; and in these cases, the colour, opacity, and other characters described, may enable its presence in the combined form to be recognised without the aid of chemical reagents. In applying tests for albumen, some precautions are necessary. In alkaline urine, the use of heat alone will sometimes fail to precipitate albumen if the amount of alkalinity be considerable. And, moreover, even in acid urine which contains albumen, heat alone does not always cause coagulation, for some reason unknown. (Becquerel.) Again, in circumstances formerly stated, heat alone may throw down carbonate of lime. It may also precipitate the phosphates. The addition of nitric acid removes these difficulties. Nitric acid may, if added in excess, redissolve the albumen which the urine contains, or it might precipitate lithic acid. By the use of the microscope the nature of the clouds thrown down by reagents may be more completely recognised. According to M. Becquerel, albumen presents the aspect of clouds formed by an aggregation of infinitely small globules. It is doubtful whether albumen in the pure form, held in solution in the urine, can precipitate spontaneously.

Besides the disease of Bright, then, the presence of albumen in the urine has been recognised, 1st, Where pus, mucus, blood, or chyle exists in this fluid; 2d, In the course of acute febrile disorders, where its amount is small and its presence irregular;

3d, In diseases characterized by much dyspnœa, which, however, may be supposed to act by congesting the kidneys; 4th, In many cases of dropsy, from various causes, where the serosity infiltrates the tissue of the kidneys; 5th, In some cases of considerable functional disorders. (*Becquerel.*)

Dr Prout attributes the presence of albumen in such cases to a suspension of the secreting power of the kidney, without actual alteration of the structure, or even a congested state of the organ being essential to such a phenomenon. He does not believe, however, that such a suspension of the function of the kidney can exist without affection of other organs. (*Prout*, p. 127.)

The results of M. Becquerel, on the existence of albumen and state of the urine in Bright's disease, are the most novel that we possess; and therefore we shall sum them up:—1. The presence of albumen in this disease is a constant fact, and without exception, there it remains until a cure is effected or death takes place. 2. Its proportions vary so greatly, that nothing positive can be established in this respect. "Its proportions vary according to the individuals, the period of the disease, and often from one day to another." He has seen it vary from 2 and 3 grammes to 10 or 11 in the twenty-four hours. The presence of albumen in this disease is accompanied with a diminution of *all* the healthy secreted principles of the urine. The density in the cases varied from 1006·300 to 1014·700 so that the mean density was 1011·340. 4. The presence of albumen in the urine does not necessarily imply the deficiency of urea and salts; this deficiency occurs in Bright's disease solely from the state of anemia produced. It has been long ago ascertained that the amount of albumen is greatest in the early stages; and that then the salts and urea are least diminished. 5. All the healthy principles of the urine are equally diminished in Bright's disease. 6. In this affection the urine may become deeper in colour, smaller in quantity, and deposit sediments of uric acid; such a state will be found to coincide with some of the inflammatory attacks to which patients affected with Bright's disease are liable, an advanced state of diseases of the heart, cirrhosis of the liver, or intense pulmonary emphysema. So that the lesion of the kidneys does not hinder the urine from being subject to the laws already established with regard to the variations of the different principles. 7. In some cases of Bright's disease we see the urine become alkaline, and present sediments of phosphate and carbonate of lime, and of the ammoniaco-magnesian phosphates. In these cases a great quantity of carbonic acid exists united with the different bases, which results from the decomposition of urea. In some cases, when the urea might be supposed to be secreted in greatly diminished quantity, it will be found in reality to have undergone this transformation. 8. A small quantity of blood is often found in the

urine about the commencement of Bright's disease; and it sometimes though rarely persists till the end. The blood globules are almost always greatly altered from their regular form. The presence of the blood globules is easily explained according to Becquerel, when we recollect that the first lesion in Bright's disease is a congestion of the cortical part of the kidney. 9. Independently of the blood, there is sometimes found in the urine of those affected with Bright's disease an insoluble inorganic matter of indeterminate nature, "under the form of fragments which appear amorphous under the microscope, of a brownish tint, and which give to this liquid the aspect *du bouillon sale*, to which it has been compared. The urine often presents a certain quantity of this matter, during the whole course of the affection:—Is this detritus constituted by the altered colouring matter of the blood?" Lastly, about the commencement of the disease, the chemical elements of the urine are sometimes found to have scarcely lost their normal proportions.

In some cases where the urine contains sugar in large quantity, a sweet taste may not be appreciable. According to M. Bouchardat, this is owing to the combination of the sugar of fecula with some of the chemical principles of the urine. For the various processes by which sugar may be extracted or tested, we may refer to the work of M. Becquerel, p. 123, or to the paper of Dr Christison, in the number of this Journal for April 1841. The spontaneous fermentation of diabetic urine is due, it appears, to the presence of a ferment similar to that discovered by Cagniard de la Tour in beer. This ferment appears, on a microscopic inspection, to consist of globules, some of which closely resemble the blood globules. They are insoluble in acids, alcohol, or ether. These globules which M. Becquerel has found in the urine shortly after its emission, have the property of giving rise to the production of similar globules. M. Biot has lately devised a method of diagnosing diabetic urine from the property which a solution of sugar possesses of causing the polarized ray to deviate to the right.

Besides the foreign principles already referred to here, the bile and the semen may be found in the urine, and numerous inorganic substances, whose number has been increased by the recent researches of M. Orfila on the absorption of acids and salts.[1]

We have endeavoured to give that part of the symptomatology of the urine which appeared to us most interesting, as fully as our limits would admit. Our object has also been to display in a consistent manner some of the most original of M. Becquerel's results. He treats fully of the physical properties of the urine;

[1] Rayer doubts the alleged cases of discharge of milk by the urine; the readers of this Journal are familiar with the controversy in regard to gravidine.

and further reconsiders the variations of this fluid under the head of each particular disease in which they occur. We regard his treatise as a bold attempt to establish a mathematical accuracy previously little attempted in our notions of the symptomatology of the urine. Doubtless, there is much yet to be done to accomplish this object; but when we look back a few years, we may be astonished at what has been effected.

3. Before proceeding to the consideration of the subjects, especially reserved for this division, we would say a few words on the alterations of the blood, which have been observed to correspond with alterations of the urine in disease. The pure inflammations are characterised by the presence of a large excess of fibrin in the blood, and in those diseases, the amount of uric acid is large in proportion to that of the other excreted principles of the urine. In Bright's disease, authors are for the most part agreed, that there is presence of urea in the blood, and diminution of the albumen of the serum. Dr Christison has made most researches on these points; and has come to the following conclusions:—At first the albumen of the serum is diminished, the fibrin is increased, and the red globules are nearly normal; the blood is usually buffed, and the serum somewhat lactescent from an oily matter, while its density is diminished, (*Christison* on Granular Degeneration, p. 60,) and urea is present. In a second period, the blood returns more or less to its healthy standard. The most remarkable character of the blood in the latter stages, is great diminution of the red globules; then there is reappearance of the urea which often disappears about the middle stage; and the solid constituents of the serum are generally also diminished.

The negative results obtained by M. Becquerel, and others, with regard to the presence of urea in the blood in this disease, should not weigh against the positive statements of Dr Christison: and the same may be said of the extraordinary assertion of Liebig, who, in his recent work, without noticing the observations of others, simply says, that sugar has not been found in the blood of diabetic patients.[1]

With regard to the more particular characters of the work under review, that of M. Rayer is the most complete monograph on the diseases of the kidney which has been yet given to the world. Founded on the results of a vast number of observations, illustrated by historical and scientific research, and by a magnificent atlas of coloured plates,—it stands forth a monument of the industry and genius of its author. Did such monographs exist on each great class of diseases, the literature of our profession would not have many desiderata wanting. The style of M. Rayer's

[1] We have not the work of Liebig beside us at present, and cannot certainly quote the page where this astounding contradiction to former observers is given; but from memory we believe it is 165.

work is in general clear and philosophical; and, in this respect, has the advantage of that of M. Becquerel, which is frequently involved, and even dubious. On the subject of wounds of the kidneys—suppuration of the pelvis, and calyces, and calculous pyelitis, the work of M. Rayer will be found to contain a mass of valuable information. His descriptions of simple and albuminous nephritis in their acute and chronic forms, and of their various complications, furnish as minute and accurate pathological details as are extant of any disease, if, indeed, they be not unique. The subject is pursued into all its ramifications, and traced to the utmost minuteness.

The object of M. Becquerel is to present us with a treatise on the symptomatology of the urine, which shall unite the recent labours on this subject; and, at the same time, make known his own researches, both on the signs afforded by the urine, and on the disease of Bright in adults and children. His work is, as far as we are aware, the first of the kind which has appeared since the fall of the old art of diagnosing from the urine, and the rise of the more sure urinary pathology of the moderns.

The little treatise of Mr Robinson, again, contains an able and ingenious attempt to prove that the Bright's disease, of whose exact nature very different opinions have been and are entertained, is, in its origin, the same disease as ordinary nephritis, and, upon this view, the author endeavours to account for the various phenomena of the disease.

His arguments are derived from the congestive character of the first morbid stage in which Bright's disease has been recognised; the slight distinctions which authors are able to establish between the symptoms ascribed by them to the first stage of this affection, and to simple nephritis, and the similarity of the causes supposed to occasion both diseases.

The congestive character of the first stage is established by Rayer; and this author considers Bright's disease an inflammation, but not the same inflammation as simple nephritis. Becquerel denies the origin of this disease to be inflammatory. "What is the nature of the alteration of the kidneys? Is it an inflammation! Such is the opinion of M. Rayer, who does not hesitate to range it in the class of phlegmasiæ; and has given it the name of albuminous nephritis. I do not participate in the opinion of this distinguished physician; and these are my reasons: the commencement of the disease is certainly a sanguineous congestion; but are there none but inflammations which so commence? The characters of inflammation, properly so called, have never been found; viz., 1st, redness with swelling, friability, and softening; 2d, pus. Far from that, the presence of pus is, so to speak, excluded by the existence of Bright's disease; never do these two affections go together." He also asserts, that fever is not a cha-

racter of Bright's disease, but only exists where there are inflammatory affections of other organs.

Dr Christison seems to be inclined to regard the deposition of granular matter as of a tubercular character. He well states one of the chief difficulties in the way of Mr Robinson's views. "Do the cases which commence with obvious local reaction actually lead to a deposit of granular matter as the proper termination of that reaction, where it does not prove fatal in the congestive stage? There certainly seems some reason for doubting the affirmative as a universal fact. On the one hand, it is not improbable, that some of the instances where a dark, flabby, enlarged, and congested state of the kidneys has been found in connection with coagulability and gradual suppression of urine, have been nothing more than cases of ordinary inflammation, or pure nephritis, which, if not cut short by fatal coma, might have continued to run the course of an acute disease, and terminated in resolution or in suppuration, rather than in granular deposition. And, on the other hand, there can be no question, but that granular degeneration is, for the most part, a chronic disease from first to last, exhibiting at its commencement, and often throughout a great part of its progress, no signs whatever of local reaction or functional disturbance of any kind, except the obscure indications derived from changes in the constitution of the urine." (*Christison* on Granular Degen., &c. pp. 9–12.) Dr Prout is of opinion, that, in this class of diseases, and others, the state of the kidneys which exists previous to the fatal attack, cannot, by any justifiable latitudinarism, be designated by the term *chronic inflammation*." He employs the term *degeneration* in preference to inflammation in many such cases,—meaning by degeneration, the change which takes place in vital structures from decay of all their functions, and especially those connected with assimilation; but this natural weakness of the vital powers, may be simulated by their innate or acquired weakness.

The commencement of simple nephritis is, according to Rayer, denoted by shivering, which is followed by a general coldness, which may last a quarter of an hour; this is succeeded by heat, thirst, agitation, and all the general phenomena of febrile attacks. Sometimes the pain about the region of the kidney is acute, at other times it is dull, and only made manifest by considerable pressure. Sometimes the bladder is the seat of an acute pain, especially sensible when the urine is emitted, and extending along the urethra. The urinary secretion is almost diminished, and sometimes often suppressed; it contains blood or albumen, inclines to alkalinity, and may contain pus when the inflammation of the kidney is complicated with that of the urinary tubes or passages. In this disease, the coagulability of the urine is less than that which exists in albuminous nephritis, and gene-

rally disappears after one or two blood-lettings. After the shivering and renal pain which denote the access of the disease, a febrile reaction generally supervenes, during which the skin is hot and dry, and the pulse frequent and developed. The digestive system is often greatly deranged, and vomiting, tympanitis, or intestinal pains may be present. A prompt cessation of the symptoms does not necessarily indicate that the organ has returned to its sound state, *or that blood or coagulable lymph is not deposited in its tissue.* Termination by suppuration of the kidney is rare in simple nephritis. (*Rayer*, t. i. pp. 299—309.)

In simple chronic nephritis, the symptoms are all of an obscure character; and we are informed, that when the disease has attacked the two kidneys, its chief symptom is a slow and gradual deterioration of the constitution; it is sometimes only a succession of slight acute attacks; induration of the kidney is its most common anatomical form. When there is no pus and mucus in the urine, it rarely contains albumen in this disease. (*Op. cit.* pp. 310—314.) The morbid characters of simple nephritis closely resemble those of the first stage of the granular disease, or rather we believe they must be considered identical.

"When the affected points are not yet infiltrated with pus, they offer a general red tint." The cortical vessels and polygons of the surface are better marked; the Malpighian glands are greatly congested; the surface of the kidney is sometimes rough; the organ is often double or thrice its weight; sometimes there is a red hardening of the two substances; sometimes "the kidneys offer a mixture of hyperemia and anemia, and there is complete decoloration of the cortical substance, the exterior of which is irregularly elevated."

When pus is deposited after inflammation of the kidneys, it is in the form of isolated masses, varying from the size of a pin-head, to that of the pustule of impetigo, dispersed throughout the substance of the cortical portion, or on its surface. (*Op. cit.* t. i. pp. 314—317.)

The general symptoms of acute granular nephritis, as related by Rayer and others, (*Op. cit.* t. ii. pp. 105—113,) closely resemble those of the simple forms, and we have looked in vain for an absolutely distinctive symptom of any kind, except the accompaniment of the granular form with *anasarca*. The term simple chronic nephritis is applied by Rayer to a comparatively slight disease; the granular disease is of the most formidable character,—infinitely more formidable in the symptoms and complications. But is there any difficulty interposed by this difference of character in the diseases, in the way of our ranking them as modifications of one and the same affection? Most assuredly not, unless it be that stated by Dr Christison and M. Becquerel, which appears to us to amount to this question,—Why does simple

nephritis, or hyperemia of the kidney, sometimes terminate in the simple softening of the kidney, or in deposition of pus, and sometimes in the various forms of granular kidney?

The causes which give rise to granular kidney, correspond closely to those which have been ascribed as occasioning the ordinary nephritis. But we would ask, whether the intervention of a strumous diathesis, or an analogous state, may not give the tendency to the terminations proper to Bright's disease?

Mr Robinson advances other arguments in support of his views, than those which we have adduced. By tying the renal vein in rabbits, he succeeded in producing great enlargement of the kidney,—a state not dissimilar to the first or congested stage of Bright's disease, and albuminous urine. He adduces those cases in which renal phlebitis has been found to accompany the disease, as in his favour. The causes of the affection are all such as are likely to occasion great or repeated renal congestion, frequent exposure to cold, those causes, and probably *diseases* which repel the cutaneous secretion, and occasion more work for the kidney, the ingestion of stimulating drinks, and of substances likely to irritate this organ, the abuse of venery, &c.

There can be little doubt, that the essential lesion in Bright's disease, is connected with consequent obstruction to a greater or less degree of the Malpighian glands, and vessels which proceed from them to ramify on the urinary tubes. Mr Bowman has recently found these bodies to consist of "a small mass of vessels contained within the dilated extremities of the convoluted uriniferous tubes." After the twig from the renal artery has pierced the capsule of the Malpighian body, it terminates in convoluted capillaries, which form a ball, from which a solitary efferent vessel escapes, passes out from the capsule, enters separately the plexus around the uriniferous ducts, and supplies it with blood. From this structure, although Mr Bowman has scarcely yet made the physiological applications of his discovery, there can be but little doubt of the important secreting functions performed by these bodies.

Now, all the more recent observers agree in the obstruction of the Malpighian bodies in Bright's disease. M. Becquerel thus relates the comparative results of a number of injections made in kidneys affected with granular disease, and in healthy organs.

"In sound kidneys, the injection succeeded admirably; that by the artery penetrated into the glands. The smallest vessels of the urinary and arterial vessels were injected to the surface of the kidneys.

"In diseased kidneys it was different; the glands were only very incompletely and very imperfectly penetrated by the matter of the injection; and the venous and urinary vessels remained in part impermeable. It stopped at a certain distance, and only

penetrated the middle-sized vessels. Some with difficulty traversed the cortical portion, and got to the surface of the kidney."

He says, "This alteration is evidently the first degree of Bright's disease; it is a sanguineous congestion which augments the volume of the glands of Malpighi. This sanguineous congestion explains the ulterior development of the disease." He thus defines the state of the gland in the next degree. "It is an infiltration by an albuminous or rather albumino-fibrous matter, which passes through different degrees of transformation." And the first transformation will be the loss of its colouring matter; and which colouring matter forms the organic detritus, of whose existence in the urine we have already spoken. The appearances of the tubular portion may be explained by the compression which is sustained by those parts of it interposed between portions of the cortical substance, and by the deposition of effused lymph. Mr Robinson has given very good explanations of some of these changes. He found that by injecting various coagulating substances into the renal vessels, appearances could be induced in the previously healthy kidney, which closely similated those of the more advanced stages of Bright's disease. "The granules on the surface of the kidney become quickly enlarged and prominent, so as to project above the rest of the intergranular surface: the intergranular substance retains its natural colour a considerable time, but ultimately this becomes changed to that of the granules, or to a yellowish white."

Should we adopt the doctrine of Mr Robinson, we can, as he remarks, the more easily account for the supposed rarity of idiopathic nephritis, of which many have not seen a case who are not unfamiliar with the granular form. The circumstance of the presence of anasarca in Bright's affection, must then be accounted for by the more extensive alteration of the organ, and corresponding effect on its secretion.

We pass now to M. Becquerel's observations on the disease of Bright in children. When attention was first directed to Bright's disease, it was thought to be very rare, and even not to be observed in children. M. Becquerel maintains that it is nearly as common in children as in adults; and that the differences which may exist are due to the age of the young subjects, and the nature of the antecedent maladies with which they have been affected. The morbid alterations of the kidneys are much the same in children as in adults.

In 17 cases of autopsies he found the following accompanying or consecutive lesions:—anasarca in 14 cases; ascites in 11 cases, of which the viscosity was transparent in 5 cases, purulent in 3, and in 3 of the cases there was tuberculous peritonitis; hydrothorax in 9 cases, in 6 of which the viscosity was clear,—purulent and turbid in 3; in 2 of the cases there were recent false mem-

branes; hydro-pericarditis in 5 cases. There were also the following alterations:—œdema of the lungs in 6 cases; pneumonia in 6 cases, 1 of which was double; angina, with suppuration and destruction of the tonsils, 1 case, (complication with scarlatina,) tuberculous ulcerations 1 case; entro-colitis, with softening of the mucous membrane, 4 cases. There was no remarkable alteration of the brain and its membranes, except a case of acute hydrocephalus.

In the same number of cases, there were found the following lesions of more ancient date, and which might have determined the lesion of Bright:—3 cases of heart disease, 1 case of scirrhus of the liver, 2 cases of pulmonary tubercles, 3 cases of caries of the bones without tubercles. Altogether he has observed 25 cases of Bright's disease in children, of which 17 proved fatal.

From the analysis just given, it seems that the disease is liable to give origin to the same class of affections in children as in adults; there are the same dropsical effusions and inflammatory attacks; and it would also seem that there are the same kind of organic lesions of older date, and which stand in the relation of causation to the disease. The urine is modified in children precisely as in adults.

In 6 of his cases, the Bright's disease was simple without antecedent organic lesion; in one of them, cold could be traced as the origin of the disease,—in another case, the patient was convalescent from typhoid fever when attacked. In the other 4 cases, no cause could be assigned. In 7 cases the disease was the consequence of scarlatina. In 6 cases there was antecedent scrofulous affection of the bones. In 2 cases antecedent pulmonary tubercles. Disease of the heart in 3 cases, in which one coincided with pulmonary and pericardiac tubercles.

With regard to the age of the patients:—2 cases were three years; 2 cases were three years and a half; 2, four years; 1, five years; 2, eight years; 2, nine years; 2, nine years and a half; 3, ten years; 2, eleven years; 3, twelve years; 4, thirteen; 1, fourteen. Ten of the patients were boys.

The symptoms of the disease in children present nothing peculiar.

In conclusion, there is no subject connected with medicine more proper than that with which we have been occupied, to show us the vast improvements that may be effected in our art by the application of the resources of science. Chemical analysis and microscopic research have gone hand in hand in the study of urinary pathology; and where a few years ago all was darkness, we might almost say that now all is light. The discoveries that have been made are brilliant, grand, and full of practical application. Mr Bowman promises us to extend his microscopic researches to the study of the state of the Malpighian glands in

Bright's disease; and his results may possibly afford us an instance in which we can tell *how* secretion is modified in disease. So far have researches been pushed in the study of this and other kidney diseases, that little but such minute questions remains for examination. In the study of the alterations of the urine, we still want such precise statements as M. Becquerel has sought to establish,—numerical tables showing the variations in the different diseases,—especially in affections of the system, and of other organs than the kidneys.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

ON THE PHYSIOLOGICAL AND MEDICINAL PROPERTIES OF BROMINE AND ITS COMPOUNDS; ALSO ON THE ANALOGIES BETWEEN THE PHYSIOLOGICAL AND MEDICINAL PROPERTIES OF THESE BODIES AND THOSE OF CHLORINE AND IODINE, WITH THEIR CORRESPONDING COMPOUNDS; BEING THE HARVEIAN PRIZE ESSAY FOR 1842. *(Part Second.)* BY DR R. M. GLOVER, Newcastle-on-Tyne.

DR GLOVER commences this part of his essay by examining the physiological properties of the bromides of potassium and sodium. Dr G. believes that his "experiments appear sufficient to enable us to compare the operation of the bromide with that of the iodide of potassium, as shown by analogous experiments. According to Mr Blake, the salts of potass, when injected into the veins, destroy the irritability of the heart, and when introduced into the arteries, obstruct the circulation through the systemic capillaries. The experiments just related prove both these properties to be possessed by the bromide of potassium." He observed that the salt had a decided effect in exciting muscular contractions, which in one case were continued when the heart's action had ceased—this was a sort of tremor which pervaded all the voluntary muscles. When the bromide of potassium was administered to rabbits, by the stomach, the action was that of an irritant poison, closely resembling the iodide, but not quite so powerful. The same applies to the more gradual physiological action of this substance. He finds the effects of the chloride to be much the same as those of the analogous substances. The bromide of sodium does not appear to differ much from sea salt in physiological properties. The bromide and iodide of barium possess all that peculiar action on the nervous system for which the other compounds of their base are remarkable; and they especially resemble the chloride, with which they are not in this case isomorphous.

The bromide of magnesium appears to resemble the other magnesian salts

in physiological action; it is by no means an
and a half of it, in three fluid drachms of water,
having produced ulceration of the stomach.

Dr Glover performed several experiments or
thus appears, that the bromide of zinc, when
tem, puts a stop to the motions of the heart, w
stroying the irritability of the organ; and that
so as to pass through the systemic capillaries,
obstructs them temporarily, but exerts its dele
tral organ of the circulation, when it arrives th
ment is partly opposed to that of Mr Blake, v
perty of obstructing the systemic circulation to
conceives that there can be no specific action
the pulmonic or general capillaries. He doubts
struct these vessels, but such as act chemicall
tents; and asserts, that if a salt thrown into th
them, the same salt thrown into the jugular w
pillaries in like manner, *unless it previously de*
lity of the heart.

Generally speaking, he found the physiologi
tion to resemble that of other zincoid compound
and iodide.

The bromide of iron he found to bear a close
the same base. When injected into the jugular
grains, its action was almost entirely manifest
which was found to deepen gradually in colour
the stomach to the rectum, which "was vascu
with dark spots." In an experiment, where he
the mouth, he found the oxide combined with
the acid, with a small quantity of the metal in

Many experiments were performed with the
cury. In a case where a rabbit had twenty gr
duced in the solid form into the stomach, a cur
mal died convulsed in seven minutes, its resp
affected. After death the blood was found in a
and the serum effused into the cavities.

Dr Glover states, that he determined the ab
blood, (supposing the evidence he adduces of th
October 1840. The process by which he dete
the same as that of M. Orfila, given in the
Monthly Journal, p. 859. But Orfila failed t
blood; he only obtained it in the viscera.

Both the bromide and chloride destroy the i
injected in large doses into the jugular. A c
where corrosive sublimate was thrown into th
corrosive action upon the nervous centres was

Dr Glover thinks that the physiological actio
milder than that of the chloride. He is induce
fect, that among chlorides, bromides, and iodi
the iodide is the most active physiologically, th
chloride, while all this is reversed with the elec
all cases, the activity will be as the solubility of
decomposition, according to what has been said
bromine, and iodine for electro-positive and el
the introductory part of this paper."

We have next some experiments related with
appear to justify the conclusion that this subst
tion on the nervous system resembling that of

mendous irritant known. There is a great deficiency of antidotes. The cold affusion chlorine and ammonia are antidotes to the action on the nervous system. The cyanide of ammonium, according to Dr Glover, exerts in a remarkable degree the power of producing those curious muscular tremors after every other sign of life is extinct.

The author next describes a class of bodies, which appear to him to constitute a new order of poisonous substances, uniting in themselves such properties as have not yet been found united. These bodies are the chloride, bromide, and iodide of olefiant gas,—chloroform, bromoform, and iodoform. "The distinguishing characteristics are, first, the remarkable power they possess of obstructing the pulmonic circulation, whether they are injected into the veins, or introduced into the stomach; then the action on the spinal cord, and afterwards on the brain; and, lastly, the corrosive and irritant action exercised on the stomach." They corrode and blacken the stomach, and congest the lungs in an enormous degree, and peculiar manner.

With regard to the medicinal properties of bromine and its compounds, Dr Glover considers the solution of bromine in water an elegant and useful application to scrofulous, syphilitic, and specific ulcers; also to eczematous eruptions. He gives a case of obstinate tuberculous eruptions, where an ointment of bromine and hydro-bromate of potass,—eight minims of the element, and half a drachm of the salt, to the ounce, effected a cure; also a case of sarcomatous tumour of the knee removed by a similar ointment, only stronger. He gives cases to prove that the bromide of mercury will cure syphilis as well as the chloride; but that contrary to what has been asserted on the continent, it is as likely to give rise to disagreeable symptoms during the constitutional treatment. The bromide of iron he regards as an excellent general tonic, sitting easier on the stomach than any of the *strong* preparations of this base. He gives it in from one to four or six-grain doses.

His general conclusions are, that physiologically, bromine and the bromides are nearer the group of chlorine and chlorides, than that of iodine and iodides; he maintains that the chemical and physiological relations are alike, and that the same is true of the medicinal properties.—Abridged from *Edin. Med. and Surg. Journ.*, Oct. 1842.

[We gave an abstract of the first part of Dr Glover's paper in our August Number, p. 709.]

On the Pus-like Globules of the Blood. By George Gulliver, Esq., F.R.S.

Although the pus-like globules occurring in the blood of patients affected with severe inflammatory and suppurative diseases, (See *Philos. Magazine*, S. 3, vol. xiii. p. 193, September 1838), are like the pale globules now so well known as belonging to healthy blood, it often happens that the former globules differ manifestly from the latter.

The globules first mentioned are generally much more abundant, rather larger, more irregular in size and shape, and often more opaque, than the pale globules of healthy blood. The globules occurring in disease, too, are frequently clustered together very remarkably; they are sometimes of a reddish colour, including from one to four blood discs, rarely more, in a very delicate and pale envelope. Besides, in the pus-like globules of the blood in inflammatory and suppurative affections, the molecules composing the nucleus are mostly either surrounded, or widely separated, by minutely granular matter, which is by no means so remarkable in the pale globules of healthy blood.

In a case of great swelling with purulent deposits in the leg of a mare, the pus-like globules, having an average diameter of 1-2666th of an inch, were almost as numerous as the red discs; while in the blood of a healthy mare,

examined at the same time for comparison, the
so plentiful, and their diameter ranged betwee
inch.—*London and Edin. Phil. Mag.*, Sept. 1

Structure of Fibrinous Exudations or Fa
Fibres. By George Gullive

Referring to his figures, in *Gerber's Anato*
and of fibrinous exudations, the author now
show the identity of structure in fibrine coagu
simply from rest, and false membranes resulti
The fibrils of fibrine are represented as of
and the corpuscles have the characters of pr
The fibrils may have either a parallel arrange
nent membranous tissues, or a more tortuous
croscopic network; and every gradation betwe
ous appearance of the fibrils may often be rec
" Mr Gerber (*Gen. Anat.*, figs. 16–18) has
first, second, and complete stages of *fibrillation*
in the fibrine composing coagulable lymph; b
his drawings are magnified, though in some of
have been employed. Others are sufficiently
which he says the fibres are formed; and this
my observations are at issue with the views
cerning the origin of fibres.
" ' All the organic tissues,' says Dr Schwann
be, have one common principle of developmen
tion of cells; that is to say, nature never unite
fibre, a tube, and so forth, but she always in t
cell, or changes, when it is requisite, the cells
they present themselves in the adult state.'
Willis, p. 222.)
How is the origin of the fibrils which I have
of fibrine to be reconciled with this doctrine?
these fibrils may not be the primordial fibres
never see any satisfactory evidence that the fib
cells; and indeed in many cases the fibrils are
lation, that their production, according to the
logist just quoted, would hardly seem possible.
that these fibrils arise from the interior of the
delineated in the last interesting researches of D
Phil. Mag., Oct. 1842.

An Inquiry into the Anatomy of the P
Accessorius. By James Sp

[A valuable anatomical paper with the abov
porary Journal.]

It is well known that considerable differ
existed among anatomists and physiologists
of the par vagum; some maintaining that
incident, while others have maintained that
filaments. Scarpa, Arnold, Bischoff, Valentin
the motor filaments of the pharyngeal and l
vagum actually come from the spinal accessor

Volkmann, &c., maintain that a few motor filaments are bound up in the par vagum at its origin, though they admit that the greater number of the motor filaments found in the trunk of this nerve, as it lies in the neck, are derived from the spinal accessory. Mr Spence has proved, by accurate and minute dissections, that a few of the filaments of the par vagum are non-ganglionic or motor, passing over the superior ganglion of this nerve, and joining themselves to the internal root of the accessory. The white nervous cord so formed by this junction can be traced down over the inferior ganglion of the vagus to which it gives one or two delicate filaments, and at last seems principally to pass into the formation of the inferior laryngeal nerve.—*Edin. Med. and Surg. Journ.*, Oct. 1842.

PRACTICE OF PHYSIC AND PATHOLOGY.

Pathological and Histological Researches on Inflammation of the Nervous Centres. By J. H. Bennett, M.D.

[This important communication, (of which the following is a brief abstract,) may be considered as the first positive addition to our knowledge of nervous diseases, which has been made in this country, by means of the microscope.]

Dr Bennett has given the details of 16 cases, in which the symptoms, post mortem examinations, and microscopic structure of the diseased parts are carefully given. The first three cases may be called instances of acute, subacute, and chronic inflammatory softening. The softened portions of brain were found, when examined with the microscope, to contain certain abnormal structures, previously seen in cerebral ramollissement by Gluge, and called by him, aggregation globules of inflammation. Dr Bennett describes them as existing in three forms, which he denominates respectively, exudation corpuscles, masses, and granules. The exudation corpuscle has an envelope containing granules within it. The exudation masses are composed of a greater or less number of granules aggregated together. These Dr Bennett has seen (obs. 2,) coating the blood-vessels externally, in masses more or less dense. These bodies, the author seems to think, are characteristic of softening caused by inflammation, as distinguished from other kinds of softening. In the fourth case, the exudation corpuscles were observed to have a nucleated character. Here there was softening on both sides of the brain, but the microscopic bodies were only found in the hemisphere opposite the paralysed side. The fifth case is very interesting. There was complete resolution of the limbs on one side, while on the other, they were perfectly rigid. The resolution was explained by apoplexy on the opposite side of the brain, but the cause of rigidity could not be detected, until the microscope showed exudation corpuscles and masses to exist in the opposite cerebral lobe. The sixth case is somewhat similar. These observations demonstrate that morbid changes in the brain, producing marked symptoms, may be shown to exist by means of the microscope, although imperceptible to unaided sight. In the seventh case, there were several circumscribed softenings, which also contained exudation corpuscles and masses. The eighth and ninth cases show the same bodies to exist in the white central softening of the brain. In the tenth case, the softening was principally in the white matter, above and external to the corpora striata and optic thalami. The brain surrounding it was turgid, of a yellow straw colour, but contained no exudation corpuscles or granules,—showing that the extent of colour is no index to the extent of softening. The four next cases cases show the connection between hemorrhage and inflammation of the brain, and under what circumstances they

mutually occasion each other. In the sixteenth case, it is shown that a circumscribed softening of the spinal cord, in a case of tetanus, contained no exudation corpuscles or masses, from which circumstance, in conjunction with the nature of the symptoms, the author concludes it was not inflammatory, but probably produced by the saw, when opening the vertebral column. Dr Bennett concludes this, the first part of his paper, with the following statements:—

"I am unwilling, at this stage of the inquiry, to advance any conclusions, from what may be considered insufficient data. Some of the facts which have been elicited, however, may be here indicated.

The preceding series of observations have confirmed the statement of Gluge and Valentin, regarding the presence of exudation corpuscles in softening of the brain. They have further demonstrated:—

1st, That the microscopic bodies peculiar to cerebral softening may occur primarily in the form of granules, masses, and nucleated corpuscles.

2d, That these so called exudation granules, masses, and nucleated corpuscles may be observed coating the blood-vessels externally, clearly indicating their origin.

3d, That they are found equally in the red, yellow, and white softenings of the brain; in what has been considered chronic as well as in acute softening.

4th, That the softenings in which these bodies have been detected, both from their appearance and from symptoms which have accompanied them, are of an inflammatory nature.

5th, That these bodies have been found in great abundance where no appearance of softening or inflammation was evident to the naked eye, yet where the symptoms of such lesions were well marked.

6th, That white and yellow softenings may exist without the presence of exudation corpuscles, masses, or granules, but that the symptoms which accompany these, are not those indicating inflammatory softening.

7th, That the red, yellow, or white softenings are in no way dependent upon, or connected with the infiltration or presence of pus.

The importance of these facts, both as regards the pathology of softening, as well as respects our knowledge of the subject of inflammation, will be dwelt upon in a subsequent part of this paper."—*Edin. Med. and Surg. Journ.*, Oct. 1842.

Successful Inoculation of Favus. By Dr Remak of Berlin.

Dr Remak states that as long as he attempted to communicate the favus (*porrigo lupinosa,*) to individuals of the human species, by inserting small portions of the crust into punctures or abrasions of the skin, as in the experiments of Gruby and Bennett, that he met with the same want of success as these gentlemen. He then proceeded to perform the experiment in the following manner:—He affixed to four parts of his forearm, without any previous wound of the skin, small portions of the crust, (which consists, as the well known discovery of Schönlein has shown, of aggregated microscopic fungi,) surrounded with plaster. After three or four days the pieces of crust fell off with the dried plaster, without leaving any apparent traces, and considering that the experiment had failed, he no longer forebore to wash the part with soap and water. About fourteen days after this his attention was attracted to one of the innoculated parts by a strong sensation of itchiness, and he there found a dark red spot of the form and size of a small vest button, covered with epidermic scales like to psoriasis gutta, and the skin at this place was thickened and hardened. In the course of a few days, a dry yellow favus-scab formed itself on this spot. That this was the true tinea favosa, or prorigo lupinosa, was proved by microscopic examination, and by the testimony of Professors Schönlein, Müller, and Romberg who examined it with the naked eye.—*Medicinische Zeitung Berlin*, August 3, 1842.

SURGERY.

Physiological and Pathological Observations on the Mechanism of Spontaneous Luxations of the Femur. By M. Parise.

The author first gives the information known on this subject. He does not deny that the caries of the bones may favour the luxation, but he says that it must be to a much greater extent than is supposed, to cause dislocation, without the intervention of fluid. He does not believe that the inflammatory swelling of the cartilages would do it; but he is disposed, from some facts, to think that it is sometimes owing to swelling of the fatty tissue at the bottom of the cotyloid cavity. He demonstrates, in three ways, that it is caused by fluid:—1*st*, By reasoning: by the laws of hydrostatics, the presence of a fluid in the capsule of the joint ought to force the head of the femur outwards; and as the opposing force exerted by the femur is not equal to that exerted against it, it follows, that the head of the bone is gradually pushed out of the socket. 2*d*, By experience: when a liquid is injected into the cotyloid cavity, the head of the thigh-bone is pushed outwards, but not entirely out of the joint, being kept in its place by the ligaments; it is well known, however, that the strongest ligaments yield in time to long-continued distension. 3*d*, By observation: he mentions several facts which he has read in authors, and some cases that he has met with in the Foundling Hospital, where there was no doubt of the influence exerted over the disease by a too abundant secretion of synovia. It is in this way that M. Parise explains the greater number of cases of congenital luxation of the hip; the head of the femur is brought, by dropsy of the joint, to the border of the cotyloid cavity, and the muscles then pull it upwards and outwards.—*Archives de Méd.*

Cases of Gun-Shot Wounds received in Canada in 1838. By Thomas Stratton, M.D. Edin., Lic. Roy. Col. Surg. Ed., Navy Medical Department. (In a Letter to Sir George Ballingall, M.D.)

The following cases are part of the surgical fruits of an action which took place on the river St Lawrence, and its British shore at Prescot, seventy-one miles below Kingston, on the 13th of November 1838. My principal object is to note the amount of bodily exertion made by the individual immediately after receiving the wound,—a question which is interesting in medico-legal cases,—and to state the length of time under treatment.

Case 1. Robert Kershew, private, royal marines, aged 20, was wounded first in the thigh, fired two rounds, and then at 8 A.M. was struck by a musket-ball, which entered the right umbilical region; he fell down, and was carried 200 yards to a house for shelter, where, two hours after, he received surgical attention, and the ball, being felt superficial, was extracted on the left side of the third lumbar vertebra. While in the house, there was great hemorrhage, he had several attacks of syncope, great dyspnœa and thirst; was then conveyed two miles over a rough road in a waggon, the motion of which gave him so much pain, that it had to halt several times for his relief. At 5 P.M. was taken on board a steamer; had two bloody dejections; he arrived next morning at Kingston, where he expired at 10 A.M., twenty-six hours after being wounded.

In consequence of other duties the body was not examined.

If death had been in consequence of that depression of the heart's action, which is sympathetic with severe injury of the peritoneum, the fatal event

might have been expected sooner. In peritonitis from perforati testines, death takes place generally in less time than twenty-six an autopsy, it might have been ascertained whether the death of p was from this cause or from hemorrhage; it appears more likely from the former.

This case shows the necessity of spring-carriages for the conve wounded.

Case 2. Thomas Burton, private, royal marines, aged 26. A passed through the right side of the under lip, destroyed the tooth, fractured and lodged in the inferior maxillary bone. Th siderable bleeding for about twenty minutes. Half an hour af quite torn up, was extracted from within the mouth, in doing force was required. *30th day.* The wound in the lip is united, wound within the mouth, no discharge, a large effusion of callus after, an offensive, bloody, and whitish discharge took place from Two months after, (January 13,) he masticated a little, but on only. When he attempted to masticate on the injured side, h weakness in the jaw, and a soreness in the bone in the line of t In the tenth week, he returned to duty.

Case 3. John Chapman, corporal, royal marines, aged 24. A entered the left elbow-joint in front, passing out behind a littl and fracturing the outer condyle of the humerus. At the time, h twenty yards from the rebels; on being hit, the musket dropp hand; he then walked two miles. Much hemorrhage followed hour; felt qualmish for twelve hours after; there were two l sleeve; the one where the ball entered was round, and that wh out was ragged. There was great constitutional excitement, r pious venesection, great swelling around the joint and crepitus, discharge from both openings. Twelve or thirteen pieces of bon discharged at different times; for a day or two before these escap ing sensation was felt; no bits of cloth have been discharged. seven weeks he kept his bed, and applied fomentations of hot getting up, these were discontinued, except occasionally at nigh no use of cataplasms. For the first ten weeks, considerable dis both openings. *April* 13. The entrance foramen has cicatrized; from the other; there are still some pieces of bone to come awa is prone; can only half extend the fore-arm; general health, go casionally a slight aching along the fore-arm, on the day before the weather to rain.

Case 4. John Powel, private, royal marines, aged 31, when a yards from the rebels, was struck by a musket-ball, which ente fore-arm at its ulnar edge, three inches from the wrist, reapp middle of its palmar aspect, and then passed between the body removing the skin from the inner side of the latter. He fired after the wound, of which he was not aware immediately on rece observing blood at his finger-ends; there was considerable bleedin minutes, and he felt faint for some time; the three shot holes were very irregular. He kept his bed two days. Fomentatio employed. There was hardly any discharge from the exit f much discharge for eight days from the entrance foramen; no p have been discharged, but some bits of clothing have escape foramen. On the 28th day, he returned to his duty. *April* 16 the same as before the wound, except that it is a little weaker there is no difference felt on change of weather. The cicatrix of foramen is slightly elevated; that of the exit foramen is of height.

Case 5. Richard Perry, private, royal marines, aged 28, was in the left thigh, fired two rounds, was then struck in the right

he went to the rear. A musket-ball grazed, and made a track five inches long on the inner and middle part of the right thigh, the breach in the trousers being of corresponding size and very ragged. The only treatment was simple dressing. There is no lameness in consequence of the wound; he cannot flex the leg so perfectly as before. A musket-ball entered the fore part of the left thigh four inches above the knee, and passed out behind, two inches higher up; considerable hemorrhage for some hours. After being wounded, he walked 200 yards, and was then conveyed in a waggon, the jolting motion of which, as he was not accustomed to it, made him qualmish; the entry hole in the trousers was round, and the escape hole ragged. There was little constitutional irritation; he was confined to bed for three months, during which time he had cataplasms applied; no pieces of bone or of clothing have been discharged. *April* 16. The general health is good; some lameness of the left leg; the flexion is very imperfect, and more so in the evening after walking about during the day; in cold weather, there is slight aching in the site of the wound.

Case 6. John Steevens, private, royal marines, aged 30, was struck by a musket-ball, which entered the outer and upper part of the right thigh, and then, after firing three rounds, he felt his leg stiff, and retired; he got on horseback, and walked the horse two miles; was not able to bear the motion of trotting; there was much hemorrhage for an hour; he felt qualmish, and had tremors for several hours; the shot hole in the trousers was round, not ragged. He was confined to bed for ten weeks, and had cataplasms applied; a large abscess formed in the groin, and another afterwards in the right hypogastric region, the abscess-lancet being used five times. He was discharged from hospital in the fourteenth week with scarcely perceptible slight lameness. The cicatrix of the wound is red in the centre, blueish towards the circumference, and on a level with the surrounding skin; twelve hours before rain, an aching is felt down the fore-part of the thigh. As the shot hole in the trousers was perfectly round, and not ragged, it is probable that pieces of cloth were carried into the wound, but none have been observed to escape. As the ball has not been seen, his having been on horseback makes it possible that it fell out during the motion of riding, while suppuration taking place so far from where it entered, favours the supposition that it is still in the body. Before the above, a ball passed through part of Steevens' dress, without his being aware of it at the time.

Case 7. George Clackett, private, royal marines, aged 26. A musket-ball entered the left thigh in the inguinal triangle; he felt a shock, but did not know where he was wounded, till he saw the blood; with assistance he limped a mile to a house for shelter; there was much bleeding for half an hour; did not feel qualmish; the shot hole in the trousers was rounded. On the fifth day, an incision made half-way betwixt the anterior superior spinous process and the trochanter major, gave exit to a quantity of black discharge, sulphuretted hydrogen gas, and a ball entirely torn up. He kept his bed two months, and during this time had cataplasms applied. The surgical wound soon united; from the musket wound, there was in the sixth month, about a drachm of whitish discharge daily. *April* 13. There is not much lameness; seven or eight pieces of clothing have escaped, which circumstance agrees with the roundness of the hole in the dress. As there was a superficial soreness betwixt the spot where the ball entered and where it was found, and as no pieces of bone have yet been discharged, it seems likely that the missile did not perforate the ilium, but passed round its margin between the anterior spinous processes, while it having merely grazed the bone, makes it difficult to account for its shape being so entirely destroyed. That the wound is not yet healed up, probably arises from all the cloth not being yet discharged. In May, he was sent to Britain with other invalids.

Case 8. William Ward, private, royal marines, aged 40. A musket-ball entered the fore and middle part of the right thigh, the shock turning him

round; he fired two rounds, and was then carried to the rear, not being to walk; felt nausea for some time; the bleeding lasted six hours. O third day, the ball was cut out on the back of the thigh and nearer the l it was half flattened, and the flattened part marked by lines, as if fro femur. There has been copious discharge from both openings; great pa the femur; great emaciation; he has had to struggle with lengthened at of vomiting and serous diarrhœa; no sweating. He kept his bed months, and had cataplasms applied, which relieved the pain along the of the thigh more than fomentations. In the fifth month, he walked on crutches, the flexion and extension of the leg being very limited.

Case 9. Richard Whickam, private, royal marines, aged 24; a mu ball entered opposite the right *trochanter major;* he fired three rounds then retired a mile on foot and another on horseback; the hemorrhag slight; the shot hole in the trousers was round. Large abscesses fo around the wound, for which four incisions at different times were requ for four months a very great discharge took place, and he had copious sweats, sleeplessness, great emaciation, and hectic flush. Had wine and l burgh ale, and for two months had an opiate every night. In the month, the discharge became reduced to about three ounces in the tw four hours from the original wound, and a small quantity from two o four incisions made for abscesses. He now sleeps pretty well at night wi any opiate. Continues to take forty minims o. diluted sulphuric ac night; sweats a little towards morning; never had any diarrhœa; app pretty good; sits up in bed half an hour a-day. *April* 13. Six or pieces of bone and none of cloth have passed out with the discharge. is no pain on flexion, or rotation of the thigh; at times, on sudden mo there is pain at the inner part of the knee. The ball has not been seen is supposed to have fallen out when riding. In May he was sent home the other invalids.

Case 10. William Millar, private, royal marines, aged 33; when two from the rebels, was struck by a musket-ball, which entered three i above the *malleolus externus* of the left fibula. With assistance he w two miles to the rear. There was much bleeding for twenty minutes; swelling followed, and some time after the ball was discovered on the site side of the leg. Cataplasms, fomentations, and the water-dressing, severally employed without any apparent difference of effect. In the se week he returned to his duty. After much exercise a little swelling place. *2d March* 1842. The ball is now nearly in the same spot, but a lower down; he feels no inconvenience from it in walking or running, pricking sensation when wet weather sets in. He has no wish to hav ball extracted, as he suffers no inconvenience from it. It has now be the position specified three years and five months.

The other day, Mr Winder, late surgeon to the militia at Hamilton, nada,) informed me that last month Dr Campbell, his successor there, formed amputation above the knee, in the case of a pensioner of the 50t giment, who was wounded in 1813. He was very much reduced, and suffering from hectic, when a change for the better immediately followe operation. The ball was imbedded in the tibia, in which situation i been for twenty-nine years.—*Edin. Med. and Surg. Journ.*, Oct. 1842.

[Twelve other cases of less interest are detailed.]

Case of Empyema terminating favourably by Spontaneous Ope

By Samuel Shortridge, Esq., Surgeon, Port-Glasgow.

Upon 5th October 1838, I was taken to visit J. P., of a stout robus pearance, who presented the usual symptoms of acute inflammatory

accompanied with cough, dyspnœa, and a fixed pain near to the inferior border of the left scapula, extending across the posterior surface of the chest. He mentioned that, two days previously, while engaged in raising a heavy piece of timber, "he felt something give a crack" in the foregoing position, which, however, did not prevent him continuing his employment during the whole day, but that, upon the following day, while rowing a boat, he became chilly and squeamish, and was forced to bed, when the above symptoms made their appearance. When seen by me, I took blood to syncope, and prescribed an antimonial saline mixture, some powders containing calomel and antimonial powder, and applied a sinapism to the painful part. On the following day, there being no improvement, the blood-letting was repeated, a large blister was applied, and the medicine continued. The sputa, which now became more copious, from its rusty character, and the ordinary stethoscopic indications, enabled me to consider the inflammatory action to have extended to the substance of the lung. The usual antiphlogistic measures were continued; blisters repeated from time to time; and in the course of a few days, the acute febrile symptoms subsided; but there still remained the fixed pain near the scapula, frequent cough, copious expectoration, and a total inability to lie upon the right side, any attempt at which greatly aggravated the cough and dyspnœa. Very little benefit was derived from the treatment adopted; colliquative perspirations were superadded, to ameliorate which, mineral acid and quinine were had recourse to.

Towards the end of December, debility and emaciation had advanced progressively, and a fulness was observed over the left side of the chest, although no difference in its capacity was found upon measurement; percussion on the part elicited a dull sound; and the respiratory murmur was very faint, although audible over the subclavian region; and a few days after, a soft tumour appeared on the fifth intercostal space, an inch below, and to the outside of the left nipple. Upon the day of this discovery I contemplated the propriety of puncturing the tumour, but deferred doing so till the following day, requesting support to be given by a bandage, lest it might be ruptured during coughing; as I had some expectation that the cavity might be ruptured, since, during the few days previously, there had taken place an ejection of purulent fluid, occasionally to the extent of two pints at one time, which flowed freely and without effort, from the mouth; and sometimes so as to endanger suffocation. Having delayed the puncture, as hinted, I found the next day that the surface of the tumour had ulcerated, and my patient lay bathed in purulent matter, the bed and clothes being fully saturated with it. The purulent matter continued to flow daily from the aperture, and some came afterwards by the mouth. My patient was afterwards kept comfortable by evacuating the purulent matter night and morning to the extent of a pint, which was facilitated by turning him to the left side, and requesting a full inspiration and a cough to be made, when a soft pledget with a quantity of tow and a bandage was applied.

The cough and dyspnœa were now greatly relieved; a generous diet with porter together with the acid and quinine, were prescribed, under which he gradually regained so much strength as allowed him to go out of doors by March 1839, and henceforward he continued still so weakly as only to be able to walk a very short distance, while the purulent matter was continued to be evacuated night and morning, in nearly the same quantities as at first, by removing the bandages, &c. until three weeks ago, when blood appeared instead of purulent matter, and the wound thereafter closed, leaving a flattened thimble-like cavity, into which the point of the finger could be introduced; and he has since progressed in strength.

Upon examination, the movements of both sides of the chest are equable, and the respiratory murmur natural, as also the sound elicited by percussion. The successful result of this case may, perhaps, be regarded as a support to the practice generally adopted, of gradually evacuating such collections, as it

is very probable that only as much purulent matter flowed in the stance as reduced it to the level of the aperture. Whether or not t *mali* was some injury the pleura could have suffered while making th ous effort stated, or was the result of the chill while in the boat, combined, may appear doubtful, but that the former had some con share, may be argued from the pain persisting in that locality, eve within a short period of his final recovery.[1]—*Edin. Med. and Surg* Oct. 1842.

On a New Remedy for Scalds and Burns. By William Rhi Surgeon, Edinburgh.

In the year 1828, having let fall a drop of melted sealing-wax on t of the finger, by which it was rendered extremely painful, I plunged a solution of gum-arabic, this being the only fluid substance at hand few minutes I was surprised to find that the pain had completely ce allowed this gum to harden on the part, and on washing it off severa afterwards, I found the cuticle hardened and separated from the cut cating the usual severity of the burn, but there was no blister or effu serum, and no pain or injury of the cutis. From this circumstance I ed to try the farther effects of solution of gum-arabic in burns.

As it is of consequence to have the solution prepared instant powdered gum, if it can be procured, may be in a few minutes disso warm water. If this is not ready prepared, the common gum in sm ticles roughly pounded, will very soon dissolve, and the application case may be applied at a temperature of 96° or 100°, although in ge is more soothing when applied colder. Rancid gum solution should used, as it in this state has lost its adhesive quality. Two, three, or f plications may be necessary at intervals of five or ten minutes. T should be previously freed of all oily matters, and the first coating, i that it may be insinuated closely into the furrowed surfaces of th should be rather thinner than the subsequent ones. In order to the proper effect it should form a varnished coat of some thickn closeness over the whole space of the burnt part.

With regard to the *modus operandi* of this substance, I am as m the dark as we usually are with the mode of action of most other well- remedies. I am unable to say whether it has a specific action, or wh allays the inflammable irritation of the skin, by effectually excludi external air, and by its being a bad conductor of heat. The first pro might be so far tested, by trying if other gums and mucilages, or is for example, produced a similar effect. This I have not tried.

From some experiments, which, however, were never completed, instituted some years ago, regarding the influence of oxygen on i

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[1] The case here detailed by Mr Shortridge is extremely important, in illu the mode which nature often adopts, in order to effect a cure in cases of terminating in empyema. In all cases in which, as in the present, a circu pointing tumour is formed, it is of little moment whether the puncture be not. It may be made with much greater chance of ultimate recovery, tha no such pointing tumour is formed. But if not made, the tumour forms a s ous opening as in the present case. The reason seems to be, that adhesion siderable extent have previously taken place internally, and have thus circu the matter, which, according to the principle long ago pointed out by John finds its way naturally to one or other of the surfaces of the body. When ing tumour forms, there is a manifest and decided contraindication to the o and it very rarely succeeds in such circumstances.—*Editor of Edin. Med. a Journal.*

tissues and vessels, I am inclined to think that the exclusion of atmospheric air influences very much inflammatory action, and in this way, perhaps, the gum solution checks the inflammation of the skin in burns. Inflammation caused by touching the skin with nitrous acid and other irritants, appears to be suddenly allayed by a solution of gum-arabic; erysipelatous spots on the skin seemed also in some trials influenced by this application. And I may here suggest, that it might be tried in the first stages of the pustules of small-pox, especially those of the face, with a view to modify their development, and prevent pitting.—*Edin. Med. and Surg. Journ.*, Oct. 1842.

[Mr Rhind details several successful cases.]

Transfusion of the Blood of a Goat into the Veins of a Man. By Dr Blieding.

A man, thirty-eight years of age, was seized with an hæmoptysis, which continued so long, and was so violent, that the only means of saving his life appeared to be by supplying the loss of blood by transfusion. On the fifth day after the attack a canula was introduced into the median vein of his left arm, a syringe, previously heated, was filled with blood drawn from the jugular vein of a goat, and about five ounces were injected into the vein of the man. Immediately he complained of a feeling of oppression; but this soon afterwards went off. An attack of phlebitis came on next day, but was subdued in eight days, by means of cold applications alone. His strength from this day returned, and at the end of three months he was able to resume his usual occupation. It is remarked, as the interesting point of this case, that it proves that the injection of the blood of one animal into the veins of another is not necessarily fatal.—*Edin. Med. and Surg. Journ.*, from *Journ. de Pharmacie*, May 1842.

FORENSIC MEDICINE.

Medico-Legal Researches on the Blood. By Louis Mandl, M.D., Paris.

Use of the Microscope in Medico-Legal Researches.—M. Orfila was the first who attempted to apply the microscope to the elucidation of questions connected with medical jurisprudence. In 1827, he speaks of this mode of investigation, in his *Memoirs on the Blood and Semen.* It is to be regretted that his labours were not attended with better results; we shall presently explain the circumstances which prevented M. Orfila from deriving more benefit from his microscopic examination of the blood and semen: he discovered animalculæ in semen which had been kept dry for eighteen years on glass plates, but when he examined the same fluid, dried on linen, after having mixed it with water, he came to the conclusion that it was impossible to discover any animalculæ. M. Rattier (*Journ. de Chimie*, Mars 1837), being employed in investigating some spots on linen, moistened them with water and found the *debris* of spermatic animalculæ and some animalculæ in a complete state. He mentions, that during the trial of Contrafato, Lebaillif had already employed the microscope for the purpose of examining spermatic stains on linen, but for reasons which are not explained these experiments were kept profoundly secret. M. Ollivier (d'Angers) was the first who applied the microscope practically in a medico-legal investigation. In June, 1837, he was directed to ascertain whether any human hair was attached to the blade of a hatchet seized in the house of a person suspected of murder,

and if this were the case, to determine the colou
croscope M. Ollivier ascertained that the filam
were the hairs of an animal and not of a hum
wards fully proved, (*Arch. Gén. Méd.*, Dec.
vember, 1838, M. Devergie read a note before
hanging during life, and pointed out the pres
in the urethra; he also says that he found th
had been dried for ten months; M. Devergie,
deavouring to separate the animalculæ from th
mutilate them as to render it impossible to ide
directed, in June 1838, in conjunction with M
examine a quantity of adulterated opium; wit
scope he not only detected the adulteration, b
in which Smyrna and Egyptian opium is pre
M. Bayard (*Ann. d'Hygiène*, July 1839) has m
the microscope on semen dried on linen, &c.
injure the pieces of macerated linen, he has b
animalculæ in semen dried for two months,
The structure and colour of the tissues on whi
do not prevent our employing the instrument
culæ are easily detected on silk of all colours,
likewise easily found in the vaginal mucus c
tween the sexes.

From what has been said it is evident that
fully employed in medico-legal researches; and
ed to apply it to a question of much importan
of investigation has hitherto failed to elucidate.
dried spots, which we know to be blood; but
knowledge we are unable to say to what clas
longs. It is to this point, then, that I have
found that the microscope enables us to determ
ferent species of blood.

*Physical, Chemical, and Microscopic Charac
animals.*—We all know that blood, when draw
and separates into the clot and serum. When
separated, it dries up completely and forms a
red colour. This crust contains all the elem
water, which has passed off by evaporation. C
posed of clot and serum, but the circulating flui
When examined under the microscope, we find
cles (*blood-globules*), floating in a yellowish re
is there between the globules and *liquor sangui*
clot and serum on the other? The clot is chiefl
wise contains blood-globules enclosed in their e
also show that the liquor sanguinis contains fib
blood is removed from its vessels, the fibrine of th
and, closing on a number of globules, forms the
thus deprived of its fibrine and globules, becom

Let us now examine the chief properties bo
and of blood which circulates in the vessels, fix
on the points connected with the subject of our
and, from the serum which it has imbibed, soft
the enclosed blood-globules, which latter, again,
colouring matter (hæmatosine) of the blood; th
clot is washed with water. The clot, composed
and globules, parts with its colour when immers
retains some of the globules tenaciously, freque
move all the colour. We thus obtain a mass

filaments intersecting each other in all directions, and very small in proportion to the clot from which it is derived. The fibrin is heavier than water, and sinks to the bottom of a vessel containing it. These remarks will be found applicable when we come to speak of the chemical examination of blood-stains. Without entering further on this point, we may say that fibrine thus prepared is insoluble in hot or cold water, but is very soluble in caustic-potass. The colouring matter of the blood easily dissolves in water by maceration of the clot, and this is a very important point in medico-legal researches. But the water thus impregnated with colouring matter contains, likewise, the elements of the serum enclosed in the clot. Now the chief constituent of the serum is albumen, which we obtain by evaporating the serum; the albumen remains dry, but is soluble in cold water. When serum is gradually heated in a porcelain capsule, it gets turbid at 65°, and at 75° coagulates into an opaque mass, which is insoluble in cold or boiling water. But the appearance of the fibrine differs much according to the quantity of albumen and water contained in the mass. When the serum contains a little water, the albumen coagulates into flocci; if the quantity of water be increased, it forms a milky-looking solution, the colour of which becomes clearer as the water is more abundant.

We can now understand what happens when a spot of blood is macerated in water. The colouring matter is dissolved, and falls to the bottom of the vessel in the form of red streaks; the dried albumen of the serum is also dissolved by the water, and when the red-coloured fluid is heated, the albumen forms flocci, or merely gives a cloudy tint, according to the quantity of water employed in the maceration. Finally, the fibrine remains undissolved.

Let us now consider the principal microscopic characters of the blood, with a view of applying them to medico-legal questions. If we place a drop of blood on a plate of glass, and apply another very thin plate over it, we obtain a transparent layer of blood, which affords many facilities for examination. If the blood be taken from one of the mammalia, we perceive round, flattened corpuscles floating in serum; their diameter never exceeds the hundredth part of a millimetre;* they are of a pale red colour, inclining to yellow; these are the blood globules. Besides these we see another species of white mammellated corpuscles, having always the above diameter; these are the white fibrinous globules, or the *white globules*. The edges of the blood globules expand on both sides, and there is a depression in the centre, giving them the appearance of a figure of 8. When we add a considerable quantity of water to the drop of blood already mentioned, and examine the globules after some time, we find that they have nearly altogether lost their colour, and their edges are now scarcely visible; the white globules have, on the contrary, undergone no change. The loss of colour of the globules is proportionate to the quantity of water employed and the period of its action; thus, after half an hour, we find no trace of globules, which appear to be completely dissolved; but on adding a small quantity of tincture of iodine, they assume a yellowish tinge, and reappear. They are not completely dissolved before the expiration of one or two days.

Hitherto we have spoken only of the blood of man and mammalia, but it is well known that the globules of oviparous animals are of a very different form; the globules of the camel tribe, however, are analogous to those of oviparous animals. Their globules are elliptical, instead of being round like those of mammalia, and their great diameter generally exceeds the hundredth part of a millimetre. They are flat, and of a yellow colour, but instead of the central depression, they present an elevation in the centre. This elevation is produced by a central nucleus of oblong shape, and granulated, which is the more evidently seen in proportion as the globules have been allowed to remain between the glass plates. When the blood of an ovipa-

* 0.443 of a line.

rous animal has been dried in a thin layer, and t
ed, we get a perfect view of this central nucleus
bules lose their colour, but the nuclei remain ur
amine under the microscope a portion of dried b
mal, after it has been macerated for half an hou
but one mass of fibrine, containing some white
belong to an oviparous animal, we find all the n

Means of distinguishing Blood from all othe
searches of M. Orfila, the mode of distinguishing
stance is well known to medical jurists, but i
words on this subject. To ascertain the nature
cerate it in cold distilled water, taking care to le
the stain and the bottom of the vessel. If it be
number of red streaks, which descend and redd
fluid; the tissue on which the stain exists loses
and presents the appearance of a thin greyish la
red filaments. This is formed by the fibrine a
blood globules; the red streaks are formed by
blood, which has been discharged by the action

We have thus two parts essentially distinct, t
filaments. The fluid becomes lightly red when
when gradually heated to near the boiling point
changes its colour, and deposits flocks of coag
opaque. If flocks are deposited, they are of a
out the slightest tinge of red, the supernatant f
yellow-green tint. If the fluid be filtered and t
a green tint with reflected light, and a rosy tint
the other hand, the fluid be not filtered, and pot
is obtained. Now, there is no colouring subs
matter which produces similar phenomena. A
soft, slightly elastic, and soluble in potass; and
with chlorine and a little hydrochloric acid, thr
animal matter.

By these characters, and others which we need
can always distinguish blood stains from all oth
iron, for example, rust, &c.) M. Raspail, howe
and says, "that if you leave a bag filled with m
in the white of egg, and then dry it at a temper
stain is obtained exactly similar to a blood-spot
pletely refuted this objection, which might easil
lime. Hence, there is no doubt that the me
blood stains from those produced by any other

Consideration of the means proposed to dist
Blood from each other.—In reference to one of
long remarked, in 1827, "that one of the mo
blood stain, even when old, is the form of the
der the microscope; with this instrument we
different classes of animals. The globules of
present a white disc surrounded by a red circle,
is surrounded by an elliptical globule." M. O
the assertions of M. Dulong, but his researche
use of the microscope. It results from the
"1. That, even admitting the blood to contai
globules, it is sometimes impossible to discover
for any length of time on a piece of glass; and
lies on a piece of cloth, &c. 2. That although
may be circular, and those of birds and cold-bl
when we examine dried blood from a piece of

bules in the blood of mammalia, and round or triangular globules in the blood of birds; this probably depends on the mixture of some foreign particles with the globules." The opinion formed by M. Orfila was derived from his imperfect method of examination, and since his experiments no others have been made for the elucidation of this subject, at least with the microscope.

M. Barruel, however, attempted to resolve the question by chemical means. On mixing sulphuric acid with blood, he pretended that he could distinguish by the smell alone the blood of different animals, and even the blood of the male from that of the female. But although the experiments of M. Barruel were fully confirmed by several other medical men, we must acknowledge that the sense of smell is too uncertain and fallacious a test to be applied to questions of medical jurisprudence; besides, for the experiment of M. Barruel a considerable quantity of blood is necessary, a circumstance which rarely occurs when the opinion of a medical jurist is required. Hence, it results that we are not acquainted with any means of distinguishing the different kinds of blood from each other.

Mode of distinguishing the Blood of Man and Mammalia from the Blood of Oviparous Animals.—When the medical jurist has decided that a spot examined by him is formed of dried blood, his task is not finished. The accused person may pretend that the stain was produced by the blood of a fish, a bird, or any other animal. I have just shown that we possess no means of distinguishing the blood of different species of mammiferous animals from each other, but my experiments enable me to affirm that we can distinguish the blood of this class of animals from the blood of birds, fishes, and reptiles. The following is the process which I adopt:—I have already mentioned that when a blood stain is macerated for some time in water, we obtain the fibrine in a separate state: it is to this mass that we must direct our attention. Having prepared a piece of glass, like that used in other microscopic researches, we place on it a drop of distilled water, and then, with the point of a needle, scrape off some particles from the stain; we should choose in preference the edges of the spot, because here the dried blood is thinnest. The particles thus scraped off will be four or five in number, and not larger than pins' heads. They are next placed carefully in the drop of water, and allowed to remain for some time, until the colouring matter is removed; this generally occurs in half an hour at most. When the colouring matter is dissolved, we must remove some of the water by inclining the glass plate so as to let it run off over the edge; we then take a second plate, and place it carefully over the drop of water, avoiding any degree of pressure; persons accustomed to microscopic observations will soon be able to ascertain the quantity of water necessary for any given experiment. We have now the particles, deprived of colour, and fixed between two plates of glass. The latter are placed under the field of the microscope. Our attention should be directed, at first, to the transparent edges, where we can examine the particles most readily. If the spots have been produced by the blood of a mammiferous animal, we now find an unorganised mass, enveloping some white globules; but if the blood be taken from an oviparous animal, we see a great number of oblong nuclei, closely applied to each other, in a coagulated mass of fibrine; the external edges of each globule are not visible. We thus distinguish easily the blood of a mammiferous from that of an oviparous animal; but the microscope does not enable us to distinguish the blood of man and other mammalia from each other, because the globules present no distinctive characters. The presence of hair, &c., may, however, furnish some useful information: thus we can easily distinguish the hair of a rabbit, ox, &c., from human hair.—*Gazette Méd. de Paris*, Sept. 3, 1842; and *Prov. Med. and Surg. Journ.*, Sept. 10, 1842.

ROYAL COLLEGE OF SURGEONS IN LON

List of Gentlemen admitted Members in August, 18

Allen, Thomas, Lynn, Norfolk.
Adams, G., Bristol.
Alger, J. S., Twickenham.
Addison, H. H., Offham, Kent.
Allen, J. D., Dumlavin, County Hicklow.
Anderson, F., Belfast.
Billings, H. T., Hampstead Road.
Barnett, J. H., Farringdon.
Brigham, J.
Barker, H. O., Dublin.
Briscoe, J., Crew Green, Montgomeryshire.
Barker, A. C., Cambridge.
Brew, C. A., Tuam, County Galway.
Birkett, G., Stoke Newington.
Cooper, W., Wexford.
Challinor, T. W., Liverpool.
Cronyn, G., Callan, County Kilkenny.
Colgate, R., Dorking, Surrey.
Chapman, R. G., Southwark.
Doyle, E. D., Kilkenny.
Davis, C., Abingdon, Berks.
Dixon, J. L. W., Portsmouth.
Dimock, G., Worcester.
Daniels, H., Jermyn Street.
Davies, J. J., Poplar.
Dickson, J. P., Cookstown, Tyrone.
Ellam, J., Ashbourne, Derbyshire.
Eagar, M. W., Killarney, County Kerry.
Furlong, A., Kilmore, Wexford.
Fletcher, J. B., Renagh, Tipperary.
Griffith, E., Derby.
Griffith, S. H., Bath.
Haig, J. B., Guildford Street.
Juckes, C., Shrewsbur
James, W. A., Kells,
Keech, W. B., Axmin
Kitsell, J., Droitwich.
King, T. N., Calne, W
Lloyd, A., Croydon, S
Laffan, J., Thurles, Co
Lythgoe, T., Preston.
Leslie, W. A., Falmou
Moore, C. H., Plymou
Morley, J., Barton on
Miller, E., Chichester.
Martin, J. A. J., Blac
Meek, E., Peckham R
Manning, J., Barbado
Martin, S., Bristol.
Miller, C., Great Wak
Mosgrove, F. G. M., L
Moore, R. W., London
M'Dougall, W. J., Hol
M'Kee, J., Castledaws
Morrah, R., Sloane St
Morgan, H., Dwynnoc
Norris, H. E., South P
Neville, H., Esher, Su
Naftel, N., Guernsey.
Pettigrew, W. H., Wo
Russell, R. C., Dublin.
Richardson, J., ditto.
Russell, F. M., Marlbo
Spong, W. M., Aylesfo
Smyth, S. T., Gorleston
Slater, J. K., Knutsfor

Wiblin, W., Southampton.
Wood, B., New Romney, Kent.
Well, G. F., Windsor.
Wardley, E., Shrewsbury.
Wilson, R., Brookbon, Co. Fermanagh.
Wells, W., Grenada, West Indies.
Wickham, J., Penrith, Cumberland.
Young, M.

[There were no examinations in September.]

STATE OF THE LECTURING TRADE.

We extract, (says an esteemed cotemporary,) the following account of the doctor-manufacture in the provincial towns of England, from the *Provincial Medical Journal*, published in London: —

"In the preceding pages we have given as complete an account, as we were able to obtain from official documents, of the provincial medical schools of the united kingdom, and of the regulations adopted by the principal corporations, or other bodies duly authorized to confer licenses to practise in medicine.

"The number of provincial schools is considerable; some of them we have omitted, from being unable to collect the necessary documents; but we are rather under than over the mark in estimating them at *twenty-six*.

"One of the first reflections suggested by an examination of our list is, that while the provincial schools of medicine, properly so called, continue to hold their ground, the number of schools established in the three capital towns of the united kingdom is gradually diminishing. In London, the school so well and so favourably known under the name of Grainger, has ceased to exist; so likewise have the establishments rather ambitiously clothed with the names of Hunter and Sydenham. The only private schools which continue to drag on a species of semi-existence, are the Aldersgate-street school, the school of Mr Lane, and the school of Mr Dermott. The 'disjecta membra,' however, still struggle to sustain a portion of the glory or notoriety which the force of events is wresting from them; and we have a multitude of *ci-devant* professors, who generously devote their time and talents to the more humble, but, alas, equally unprofitable occupation, of lecturing to the empty cane-bottoms of their private dwellings. In Dublin and in Edinburgh, the same fate has swept away many of the private schools,[1] and it is with much difficulty that even the corporate and privileged establishments withstand the decay under which their less-favoured rivals have ignominiously perished.

"Two principal causes may be assigned for this unwholesome complexion of the professorial market. In the first place, the number of medical students is annually decreasing. Parents begin to find that the medical profession, overstocked in every corner of the kingdom, treated with contempt by the authorities, and pilfered in every possible way by the public, is not the royal road to honour and wealth which it was once supposed to be; hence, the industrious pursuits of the rising generation are directed to other and more profitable channels, and the pupils in lecture-rooms are, like angels' visits, 'few and far between.'

"In the second place, the number of students who visit the capitals of England, Ireland, and Scotland, is very considerably influenced by the competition of the provincial schools; and this influence, as we predicted long ago, is increased with every passing year. The council of the College of Surgeons endeavoured to check the progress of the provincial schools as long as they were able; but the injustice became too crying, and they were forced to yield. At these schools the student may now complete his surgical education without attending a single lecture in London; and it is not to be wondered that parents should prefer keeping their children under their own immediate control, rather than expose them to the temptations and corruptions of a distant metropolis.

[1] Not in Edinburgh. It is true, that the combination called "Queen's College," has, for good reasons, been dissolved, in deference to public opinion; but the lecturers who were connected with it, lecture as formerly. We may add, that one of the schools of anatomy in Edinburgh, without the University, is perhaps the most efficient establishment of the kind in any part of the kingdom; certainly there never before was one of the same strength in Edinburgh. It is conducted by Dr Lonsdale, (successor to Dr Knox,) Dr Handyside, and Mr Spence.

" Besides this, the late regulations of the Colleg attendance, must contribute still farther to the p rendering the sojourn in London longer and mor forward, no candidate will be admitted for exa unless he has attended a recognized hospital dur Now it is evident that very few medical student to a London hospital, the fees for attendance on still most exorbitant.

" Every student residing in or near any of the r henceforward, pass these four years in the provinc London can count, are those who reside in village and, therefore, may be indifferent whether they p provincial schools in their neighbourhood.

" The regulation to which we have just alluded diminishing the number of students in London, b degree, the annual number of licentiates admitted

" Taken in connection with medical education, rule ; nor do we regard the term of four years as to clinical medicine and surgery ; we merely notic ally produce, and not the least desirable of these into warm advocates for medical reform. This, w as the number of students, deterred by four years licenses from other and less expensive sources, t point, must demand, in its own defence, uniformit in return, equality of privileges throughout the un

" We had intended to extend these remarks to medical education, and to a view of the progress twelve months ; but the space which we have d bodies, in the first part of the journal, compels us

So, then, there are twenty-six medical schools i addition to the scores of them to be found in Twenty-six schools, at ten pupils to each school, and sixty candidates for " medical honours" in shall dare to say, that ten pupils is an average c tions!" Say, then, twenty to each, and twenty, it derate allowance to ten lecturers, constituting the Twenty pupils, then, to each of the twenty-six sch aspirants to wealth and distinction, in addition to enlisted for the reduction of a dangerously increa tion this for the Malthusians, who never anticipat however gratifying this prospect may be to the di sion of medical knowledge, there are others who t this carries with it a corresponding quantity of evi finement as to think that a principal use of medics it to earn a livelihood by its exercise, begin to thi to benefit the human race by the communication to be for ever buried in oblivion, may be followe them. What is sport to you, most eloquent and hard-working and pains-taking practitioners. If wasting your eloquence on stools and benches, go yards and highways, to collect an audience, sooner from their legitimate pursuits, must be found t practitioners to the public, who neither know nor or not, and who will consider their cheapness t

[1] The system of giving *gratis* tickets to veterina been practised in Edinburgh by certain lecturer benches. They act in this unfairly to the profe them. We feel assured, that did the gentlemen w

must be the consequence of this extension of the town nuisance to the country. It was bad enough to have medical recruiting sergeants at every corner in the metropolis, alluring unwary youths and embarrassed parents; but it is ten times worse to have a depot established in every country town, to which those at a loss to dispose of sons unfit for trades or steady business, can so conveniently resort. Far be it from us for one moment to insinuate that gentlemen in the provinces are not as well qualified as those in town to give what are called "lectures,"—that would be a sad libel upon them, seeing, that of all things in the world, the easiest to do, is to deliver "a course" on some of the *ologys;* we only express our apprehensions that what has proved so injurious to our profession in town, will prove ten times more so in the provinces.

But all this suggests a question,—Why do men give lectures at all? Not for money; for every one knows that there is no money to be made of it, except there be some support from public sources. Not for character and its rewards; for the notoriety of the fact, that it requires neither knowledge nor talent to do it, has put that out of the question. The plain truth of the matter is, that men profess to give lectures for the purpose of advertising themselves.[1] We do not say they all do it for this, but we say that it is the grand inducement, and that these provincial concerns are many of them mere joint-stock puffing companies; and thereupon, we shall venture to give some of them a bit of advice, by reminding them that it does not by any means follow, that judicious people will prize them for their lecturing propensities; on the contrary, we are inclined to think that many will consider that they might be better employed, and so think we, from long and woeful experience. If we had any body sick in our house, we should most assuredly prefer the young man to doctor them, who was poking after cases in lanes and alleys, rather than he who was grinding, lecturing, or demonstrating in the schools.—*Dublin Medical Press*, Oct. 12, 1842.

Royal College of Surgeons, Edinburgh.—Lectures by Mr Goodsir.—We are happy to understand that Mr Goodsir, the talented conservator of the very valuable museum belonging to this body, is, under its sanction, to deliver a course of lectures on the preparations in the pathological collection. These lectures will commence in December, and be delivered weekly during the winter session. We earnestly recommend students to attend these lectures, which are open to all possessed of a museum ticket.

BOOKS RECEIVED.

1. The Evolution of Light from the Living Human Subject. By Sir Henry Marsh, Bart., M.D., M.R.I.A., &c. &c. 8vo, pp. 59. Dublin, 1842.
   Vide our last Number.
2. A Treatise on Mineral Waters, with particular reference to those prepared at the Royal German Spa at Brighton. By J. C. A. Franz, M.D., M.R.C.S., &c. 12mo, pp. 156. London, 1842.
3. A Description of the Mineral Springs of Aix-la-chapelle and Borcette; with some account of the curiosities of both places and the environs. By L. Wetzlar, M.D., physician at Aix-la-chapelle. 8vo, pp. 88. London, 1842.
4. Report to Her Majesty's Principal Secretary of State for the Home Department, from the Poor Law Commissioners, on an inquiry into the sanatory condition of the labouring population of Great Britain; with Appendices. *Presented to both Houses of Parliament by command of Her Majesty, July* 1842. 8vo, pp. 457. London, 1842.
   Our best thanks for this valuable report. It contains much information on the deeply important subjects of medical police and hygiène.
5. Methodus Medendi; or the description and treatment of the principal diseases incident to the human frame. By

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the mischief they do to the future prospects of their paying pupils, they would discontinue it. As it is, we know the practice which we now deprecate, has tended greatly to facilitate the inroads of unqualified persons upon the regular practitioners, especially in rural districts. *Underselling* is another, and a more discreditable nuisance.

[1] This is, we fear, too true a statement. No lecturer should be allowed to deliver a course qualifying for any degree or license to practise, till he has satisfied an appointed board of examinators, of his acquaintance with the subject, and of his possessing an adequate museum, &c., to illustrate it.

Henry M'Cormac, M.D., consulting physician to the Belfast Hospital, &c. 8vo, pp. 574. London, 1842.

This work sustains Dr M'Cormac's reputation as an experienced and learned physician. It will be found a useful text-book or introduction to the study of practical medicine.

6. On Diseases of the Bladder and Prostate Gland; *with plates*. By William Coulson. Third edition, revised and corrected. 8vo, pp. 274. London, 1842.
7. Observations regarding Medical Education, in a Letter to the President of the Royal College of Surgeons. By John Simon, Demonstrator of Anatomy in King's College, London, &c. 8vo, pp. 33. London, 1842.
8. On Injuries of the Head, affecting the Brain. By G. J. Guthrie, F.R.S., Surgeon to the Westminster Hospital, &c. &c. &c. 4to, pp. 155. London, 1842.
9. Clinical Midwifery; with the Histories of 400 Cases of Difficult Labour. By Robert Lee, F.R.S., &c. 12mo, pp. 224. London, 1842.
10. A System of Practical Surgery. By William Fergusson, F.R.S.E., Professor of Surgery in King's College, London; Surgeon to King's College Hospital, &c. With 246 Illustrations by Bagg. 12mo, pp. 596. London, 1842.

Professor Fergusson's work we feel persuaded will be as great a favourite as it deserves, for it combines the powerful recommendations of cheapness and elegance, with a clear, sound, and practical treatment of every subject in surgical science. The illustrations by Bagg are admirable—in his very best style. The book is uniform with another excellent text-book which we have already recommended, Churchill's Midwifery.

11. Medico-Legal Treatise on Homicide by External Violence, in relation to the Causes of Death by Violence, and the Signs of Death by the different kinds of Injury to the Nervous, Circulating, Respiratory, and Nutritive Systems; also, to the Circumstances which modify the Medico-Legal Characters of Injuries, and Exculpatory Pleas. By Alexander Watson, M.D., &c. &c. Second edition, enlarged. 8vo, pp. 392. Edinburgh, 1842.

OBITUARY.

At Madras, on the 8th of July, Surgeon G. Hopkins, M.D., Medical Establishment.

At Quilon, on the 22d of July, Assistant-Surgeon R. Maginniss, Medical Establishment.

At the General Hospital, Calcutta, on the 20th of July, M. H. Smith, late Surgeon of the ship Burmah.

At Edinburgh, on the 22d October, Adolphus Ross, M.D.

At 16 Chapel Place, Cavendish Square, London, on the 17th October, of typhus, John Andrew Fehrozen, of the Cassey, Good Hope, aged 22 years.

On the 14th September, Frederick Philpot, Esq., Surgeon, late of Padington.

At Yarmouth, Isle of Wight, on the 30th August, C. A. Crosswell, Surgeon, of N. Brixton, Surrey, aged 33.

Lately, at Egham Hythe, Surrey, aged 83, William Tothill, Esq., Surgeon, a member of the Society of Friends.

TO CORRESPONDENTS.

"*A Subscriber*" has sent the following note. He is possibly correct, and in corroboration of his view of the matter we could adduce two cases which have lately come under our notice.

"16*th October* 1842.

"Sir,—I observe in your Number for this month an account of a case of alleged attempted abortion, copied from *The Lancet*. Might it not have been a case of nymphomania, and the patient seeking to gratify her desires by introducing pieces of bone, &c. into the urethra. A case of this kind occurred in the Glasgow infirmary in 1830, when the late Dr Craig was house-surgeon. The patient managed to get the large bones of fowls, &c. introduced into the bladder, which were no sooner removed than they were replaced by others of a similar description. At length, being closely watched and confined, she had recourse to the use of pieces of coal and stones. The case related in *The Lancet* is that of a widow who had had a child. A person in these circumstances is not a very likely one to introduce any substance into the urethra instead of the vagina for the alleged purpose, nor would she have thought herself pregnant after having once fairly menstruated subsequent to her last coition. I am, your obedient servant,

A Subscriber."

Communications have been received from Professor Syme, Dr Hocken, Mr Nottingham, Mr Parker, Mr Morris, and Dr J. W. Griffith.

THE

LONDON AND EDINBURGH

MONTHLY JOURNAL

OF

Medical Science.

DECEMBER 1.] No. XII. [1842.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Surgical Cases and Observations. By* JAMES SYME, *Esq., Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen.*

ON THE OPERATION OF LITHOTOMY.

NOTHWITHSTANDING all that has been said and written on the operation of lithotomy, the subject does not yet appear to be exhausted, as there are still two points connected with it, in respect to which professional opinion is divided; these are, the principle on which an adequate aperture at the neck of the bladder is to be obtained, and the best mode of accomplishing this. In regard to the first, the question is, to what extent may incision be safely carried? and to the second, what is the most convenient apparatus for effecting the incision? Having had occasion to operate very frequently for stone in every variety of circumstance as to age of the patient, size and number of the concretions, contraction of the urethra, and enlargement of the prostate, I think it right to state the result of my observations, especially as I have met with no small share of bad success, in

the hope that the conclusions to which I have arrived may save other practitioners from travelling through the same path of bitter experience, and assist them to perform the operation with no less exactness than satisfactory consequences.

I began to operate under the impression that infiltration of urine was the great source of danger, and that a free external incision, affording a dependent opening, together with the use of a tube kept in the wound for two or three days, would effectually protect against any risk of this kind. I also believed that if the prostate were divided to a moderate extent, the aperture might be safely dilated without any farther cutting. Proceeding on these principles, I advanced to my eighth case with only one bad result, of which the subject was a very old man nearly eighty years of age. So far it seemed that I was in the right path, and might safely pursue it; but meeting with some large stones, I was shaken in my confidence, since, when force proved necessary for extraction, although the urine passed freely and the patient made no complaint of pain in the belly, a feverish excitement followed the operation, and persisted to a fatal termination at the end of from one to three weeks, when the textures at the neck of the bladder were found to have suffered from inflammation and suppuration. I then felt satisfied that urinary infiltration was not to be avoided more than tearing the substance of the prostate; and with the view of determining how far it was necessary to cut for obtaining sufficient space, made many dissections of the parts concerned, and trials to ascertain their capacity of distention when divided. The principal result of these observations was, that after all its surrounding coverings had been removed, the prostate, when completely divided in the direction of the lateral operation, would not allow the passage of a spherical body exceeding in diameter one inch and a quarter. If one of larger size was forced through, the lining membrane of the bladder readily yielded, while the muscular fibres separated from each other so as to afford sufficient space, and if the prostate was only partially cut through, its substance could also be made to yield by pressure, since its texture, though altogether inelastic and incapable of stretching, could in most cases be torn in the line of an incision directed towards its circumference, without employing any great degree of violence. Unless, therefore, the prostate were to be completely divided, or the stone were so small as to admit of extraction through a partial incision of its substance, it followed that tearing of the glandular texture must take place, and in all probability prove fatal. I then resolved to cut freely through the whole thickness of the prostate, and can safely affirm, that in no case has any bad consequence resulted from doing so. It is true that I have still met with unfortunate results, and these I wish particularly to notice, since without ex-

filaments intersecting each other in all directions, and very small in proportion to the clot from which it is derived. The fibrin is heavier than water, and sinks to the bottom of a vessel containing it. These remarks will be found applicable when we come to speak of the chemical examination of blood-stains. Without entering further on this point, we may say that fibrine thus prepared is insoluble in hot or cold water, but is very soluble in caustic-potass. The colouring matter of the blood easily dissolves in water by maceration of the clot, and this is a very important point in medico-legal researches. But the water thus impregnated with colouring matter contains, likewise, the elements of the serum enclosed in the clot. Now the chief constituent of the serum is albumen, which we obtain by evaporating the serum; the albumen remains dry, but is soluble in cold water. When serum is gradually heated in a porcelain capsule, it gets turbid at 65°, and at 75° coagulates into an opaque mass, which is insoluble in cold or boiling water. But the appearance of the fibrine differs much according to the quantity of albumen and water contained in the mass. When the serum contains a little water, the albumen coagulates into flocci; if the quantity of water be increased, it forms a milky-looking solution, the colour of which becomes clearer as the water is more abundant.

We can now understand what happens when a spot of blood is macerated in water. The colouring matter is dissolved, and falls to the bottom of the vessel in the form of red streaks; the dried albumen of the serum is also dissolved by the water, and when the red-coloured fluid is heated, the albumen forms flocci, or merely gives a cloudy tint, according to the quantity of water employed in the maceration. Finally, the fibrine remains undissolved.

Let us now consider the principal microscopic characters of the blood, with a view of applying them to medico-legal questions. If we place a drop of blood on a plate of glass, and apply another very thin plate over it, we obtain a transparent layer of blood, which affords many facilities for examination. If the blood be taken from one of the mammalia, we perceive round, flattened corpuscles floating in serum; their diameter never exceeds the hundredth part of a millimetre;* they are of a pale red colour, inclining to yellow; these are the blood globules. Besides these we see another species of white mammellated corpuscles, having always the above diameter; these are the white fibrinous globules, or the *white globules*. The edges of the blood globules expand on both sides, and there is a depression in the centre, giving them the appearance of a figure of 8. When we add a considerable quantity of water to the drop of blood already mentioned, and examine the globules after some time, we find that they have nearly altogether lost their colour, and their edges are now scarcely visible; the white globules have, on the contrary, undergone no change. The loss of colour of the globules is proportionate to the quantity of water employed and the period of its action; thus, after half an hour, we find no trace of globules, which appear to be completely dissolved; but on adding a small quantity of tincture of iodine, they assume a yellowish tinge, and reappear. They are not completely dissolved before the expiration of one or two days.

Hitherto we have spoken only of the blood of man and mammalia, but it is well known that the globules of oviparous animals are of a very different form; the globules of the camel tribe, however, are analogous to those of oviparous animals. Their globules are elliptical, instead of being round like those of mammalia, and their great diameter generally exceeds the hundredth part of a millimetre. They are flat, and of a yellow colour, but instead of the central depression, they present an elevation in the centre. This elevation is produced by a central nucleus of oblong shape, and granulated, which is the more evidently seen in proportion as the globules have been allowed to remain between the glass plates. When the blood of an ovipa-

* 0.443 of a line.

the deeper regions, or a safe outlet f
muscles are cut insufficiently, the st
In operating with a gorget, or *bistou*
cut at once for the membranous portio
pushing the instrument into the blad
from the muscles inwards to the same
possessed a cylindrical, instead of a c
quence of this was, that if the stone e
it could not be extracted without gr
breaking it. It is thus that we are t
told of the desperate efforts made in
operators perspiring under their labou
off the table. If the muscles be properl
not oppose any resistance at all requi
force; but too readily suffers the fatal
to be avoided. The muscles, and, inde
perineum, with exception of the urinar
irritation, even from an extreme degr
seen in the case of operations and in
body. A young man was brought into
ago in a state of drunken stupor, in
lying in the street at night. On exan
some large and blunt pointed body mu
the side of the rectum, as there was
which several fingers could be introdu
along the gut and neck of the bladde
so denuded, that they were distinctly fe
had a bad symptom. The reason fo
therefore, not to protect them from
access for cutting the deeper parts, to
to promote the free discharge of urine.

It is usual to make the incisions of th
which is to be employed for cutting
and which necessarily requires a length
considerably greater than what belongs
chosen for the ordinary dissections of
instrument is, consequently, less man
one, which should certainly be prefer
step of the operation is executed m
This is laying open the membranous
which I have known operators of grea
most difficult part of the process. Wi
be no difficulty whatever, or what is
the groove, and injuring the neighbouri
tain way of attaining the object, is to
fore-finger of the right hand, and press
to make an opening into it, through wh

turned in the direction of its edge, may be pushed through the apex of the prostate. The operator then keeping the point of his finger in the hollow of the gland, should desire the curved staff to be withdrawn, and introduce a thick straight one, nine inches long, with a wide and deep groove, through the wound of the perineum into the bladder. Holding this sure guide in his left hand, raised so as to elevate the prostate, and withdraw it from the rectum, he may, with perfect confidence, introduce whatever instrument he thinks best for dividing the prostate. I would advise the handle to be four inches, and the blade about three-and-a-half long, half-an-inch broad, straight on the back, except just at the point, which should be rounded off to make it run smoothly in the groove, and sharp on the edge, only to the extent of an inch and quarter. The extent of incision may be regulated with the utmost precision, by the angle at which the knife is held in the groove; and if enlargement proves requisite, it may be safely effected by re-introducing the staff, and running the knife again along it, or using one of a larger size, with the edge rather thin than sharp.

It may be said, that there is nothing new in this mode of conducting the operation,—that Dr Thomson many years ago proposed the use of a straight staff introduced through the wound,—and that Mr Aston Key has long, by example as well as precept, recommended the employment of one throughout the whole process. But as Dr Thomson advised that the prostate should be divided "outwards and upwards," it is plain that no good could come of his suggestion; and the presence of a straight staff introduced through the urethra, is inconvenient during the early part of the operation, as I can testify from experience, while the length of the instrument renders it more unwieldy for the critical stage of dividing the prostate, than a short one introduced through the wound. The latter instrument has the farther advantage of being much more readily replaced, in the event of its proving necessary to enlarge the incision.

It may also be said, that surgeons of the past as well as present day have operated successfully with the ordinary apparatus. But this is no reason why those who do not acquire the knack of operating with a curved staff, should refrain from availing themselves of a safer guide.

In cases requiring the operation to be repeated, it has been advised to cut on the right side of the perineum. This proceeding I should think very embarrassing, and quite unnecessary. Three instances of the kind have occurred to me, in which I operated as usual with perfect facility and success.

ARTICLE II.—*A Case of Impetigo Sparsa. By* BEVERLEY R. MORRIS, A.B., M.B., *of Trinity College, Dublin, Physician to the York Dispensary.*

December 23, 1841.—Master E. B., aged 3 years, after getting his first teeth, was attacked by an impetigenous eruption, chiefly on the face and scalp, but which soon spread over the rest of the body. He has been attended by several medical men, who ordered tar ointment, iodine, &c., but without benefit. He was also bled from the external jugular vein, which relieved him for a time, but it soon returned. So distressing was the eruption, that it caused his nights to be very restless, and indeed made him as wretched as a child of that age could be. About six weeks ago, he went into Essex for change; and when there, was under a physician who ordered alterative doses of hydrarg. c. cretâ with jalap every night; also, an ointment with a drachm of unguentum hydrarg. nit. to the ounce. He seemed relieved for a time, but is now no better.

Present Symptoms.—Pulse and secretions natural; tongue clean; appetite good; belly very large, but soft; sleep much disturbed; spirits very bad; and he is always moping by himself, and does not play as other children do; face, chiefly round the mouth, covered with a most irritable eruption (*impetigo sparsa;*) two patches on the forehead of the size of half-a-crown, some through the hair; the back of the neck, and whole back, with a slight eruption; several livid spots the size of a shilling over the abdomen; elbow and knee-joints also under the influence of the disease.

The hair to be cut short; R. Oxidi zinci, ℥i; plumbi acet., ℈i; unguenti cetacei, ℥i. R. Fiat unguentum nocte maneque applicandum. R. Calomelanos, gr. ij; jalapæ pulv., gr. v. M. Fiat pulvis septimâ nocte sumend. R. Sulphuris loti, gr. v; potassæ nit. gr. iij. R. Fiat pulvis omni nocte sumend. R. Acidi hydrocyanici, ℥iv; plumbi acet., gr. xvj; alcoholis, ℥ss; aquæ dist., ℥vij. R. Fiat lotio, pro re natâ applicand.

January 7, 1842.—Very much better. The eruption is fast disappearing; it is still round the mouth, but in a much more mild form. The belly already seems smaller. He is also more lively, and does not mope so much. Contin. omnia.

March 1.—Has continued using the remedies steadily, with the most marked benefit. The eruption has entirely disappeared from the face, head, back, and joints; but the skin round the lips still seems a little red, but it is hardly noticeable. He now sleeps quietly. The belly is now quite natural in size. His

spirits are now almost too exuberant, and in all respects he is another child. Cont. omnia.

October 7.—He has remained quite well up to this time, and has had no return at all of the eruption. He has continued taking the powders regularly, but the ointment and lotion have been long given up. I have recommended them still to persevere in giving the powders.

I should have mentioned before, that the case was of a year's standing when I first saw it.

This case appears to me to be interesting, not from any thing novel or extraordinary either in its symptoms or the mode of removing them, but as showing the necessity there is for treating a disease on true pathological principles, and not adding fuel to the flame, by ordering stimulating remedies in an irritable complaint. The excessive irritability of the skin induced me to order the external applications, and they answered the purpose intended to the fullest extent; but at the same time, I was quite aware that external remedies were only of secondary importance, and therefore I ordered the nitre and sulphur, which would have a tendency to lessen the excessive action of the skin. The aperient powder was chiefly intended to remove that enlarged state of the abdomen, which may have been an exciting cause of the disease, or, at any rate, probably assisted greatly in keeping up the irritation. I have no doubt but that, had this or similar treatment been adopted in an earlier stage of the disease, it would have been followed by the same results; but most of the treatment seems to have been of a stimulating kind, and to have been empirically prescribed.

York, October 8, 1842.

ARTICLE III.—*Cases illustrative of some unusual Forms of Dislocation. By* EDWARD PARKER, Esq., *House-Surgeon to the Northern Hospital, Liverpool.*

Dislocation of the Knee. Tibia forwards.—Daniel Davis, aged 22, admitted September 11, 1841, under Mr Banner, having received an injury of the right knee, in consequence of a heavy spar falling upon him, and causing his leg to double under him. Being a Welshman, and having a very imperfect knowledge of the English language, it was impossible to obtain from him a more accurate account of the manner in which the injury was produced. On examination, the limb was found to be slightly flexed, the patella loose and floating, a large depression behind and on each side of it; the condyles of the femur were felt pro-

jecting very distinctly in the ham, while the heads of the tibia and fibula could be felt to occupy a position in front of the lower end of the femur. The usual movements of the joint could not be performed, and the patient complained of very considerable pain. It was evident, indeed, that the knee had sustained a dislocation, of that form in which the tibia and fibula are thrown anterior to the femur. The reduction was effected without much difficulty, in the following manner, by Mr Gill and Mr Stubbs, who happened to be in the hospital at the time the man was brought in. One assistant seized the limb, by grasping the thigh, while another made extension from the ankle; the operator then placed his own knee in the ham of the patient, and pushed down the head of the tibia with his left hand, while he grasped the leg with his right hand, and tried to bring it to a right angle with the thigh. By this combination of extension and flexion, the reduction was soon accomplished.

Considerable swelling of the joint took place, which was subdued by perfect rest and the constant application of spirit lotion. In a fortnight, partial motion was commenced, and in a month from his admission, he left the hospital, able to walk about, but having some slight degree of stiffness in the joint.

Dislocation of the lower end of the Ulna, forwards.— John Dalton, aged 40, applied at the hospital, August 9, 1841, under the following circumstances. States that he is a carter, and falling down, the shaft of the cart fell upon his hand and fore-arm, in such a way as to supinate them forcibly. He complains of pain in the left wrist. The fore-arm is supinated, and cannot be pronated, the attempt causing much suffering. The wrist-joint can be flexed or extended without much pain. On looking at the back of the wrist, the appearance is characteristic; the natural prominence of the ulna is wanting; an evident depression exists, as if the lower end of the ulna had been dissected out; it can be traced, however, on a plane anterior to the radius, its button-like head being distinctly felt under the flexor tendons.

Several ineffectual and very painful attempts were made to accomplish the reduction, by pushing the head of the ulna into its natural situation. This was at last effected by seizing the hand to make extension, (counter-extension being made at the elbow,) then *forcibly pronating* the hand, at the same time pressing backwards the dislocated head of the bone with the fingers of the left hand. After persevering for a short time, the bone was felt to assume its natural position, the wrist acquired its usual appearance, and the ordinary movements of the joint could be readily performed. There was no tendency to redislocation, and the man was dismissed, with directions to keep the joint quiet, and to foment it. He attended as an out-patient for two or three days, after which, complaining of nothing but a little weakness

in the part, a bandage was applied, and ordered to be worn for a short time.

Dislocation of the Ankle—Tibia outwards, without fracture of either Malleolus.—Alexander M'Cauly, aged 50, admitted July 21, 1841, under Mr Stubbs. States that he fell a height of several feet, from some part of the rigging, on the deck of a vessel, and that his foot doubled under him. He was immediately brought to the hospital, his right foot presenting the following appearances:

The sole of the foot is completely turned inwards, the outer edge looking downwards; the lower end of the fibula projects considerably, the integuments covering it being much stretched; the inner malleolus can be felt, but seems to be higher than usual. About an inch, or an inch and half, above the inner malleolus, a deep depression can be felt, which, he says, existed before the present accident, and was caused many years since by a fracture of the leg. On bending the leg and making extension, at the same time twisting the foot outwards, the reduction was easily effected. On again carefully examining the parts, no fracture of any of the bones entering into the formation of the joint could be detected; the depression above alluded to was readily distinguished, and allowed the finger to be inserted into it. It was evidently an old, badly united fracture of the tibia; the lower portion having approximated to the fibula, had caused the articular surface of the tibia to incline obliquely from side to side, instead of presenting a flat surface for the astragalus. From having in the fall alighted on the outside of the foot, this was easily dislocated in the manner described, without causing fracture of either malleolus, a complication very generally present. After the reduction, the foot continued to be a little inclined inwards; but this, he says, had always been the case since the leg was fractured.

For the first three or four days it was kept on its outside, and fomentations were applied. Afterwards it was placed in a junk; the pain and swelling soon subsided, and in the course of a few weeks he was able to leave his bed.

Sept. 27. About nine weeks after the accident he left the hospital, being then able to walk a considerable distance with little or no inconvenience.

Remarks.—Though several cases of dislocation of the knee have lately appeared in the Medical Journals, (*vide* pp. 930, 931,) it still continues to be an accident, as rare in occurrence, as formidable in appearance; so much so, that I trust the insertion of the above will not be considered uncalled for, or uninteresting.

Of the different kinds of dislocation which are liable to occur at the knee, two are said to be complete, namely, the tibia forwards or backwards. But if dislocation in these directions is always complete, the degree of completeness, I think, it must be

admitted, varies considerably. If we co
with that related by Mr Toogood in the
Surgical Journal, (MONTHLY JOURNAL, I
striking. In the latter, the tibia seems to
above the condyles; while in the former
to be placed *upon* the condyles, the post
of the tibia resting on the smooth surfac
for the patella. In the one case, the
ligaments, and other structures in th
joint, with the still more important inj
sustained by the popliteal vessels, is suc
ful result more an escape, than a term
while in the other, though the structure
sarily be severely deranged, we have less
to the vessels, and may consequently l
able issue. The importance of the acci
observance of perfect rest to prevent, a
combat inflammation, when it arises,
much insisted upon; when, on the contr
subsided, it becomes equally important t
and from not having commenced it suffi
and other accidents involving the joint
agreeable results, which, I think, mig
avoided.

The second case, or that of dislocati
is one of even still less frequent occurr
the knee; but from its involving parts
it is more interesting than dangerous.
its importance by the inconvenience whi
non-reduction, it then assumes a very di
the individual incapable of performing
sary movements of the hand; its non-re
lasting source of inconvenience to the p
the practitioner. With regard to th
remark, that the ordinary mode reco
reduction, did not succeed; but that
mentioned, no great degree of difficulty

Dislocation of the ankle joint, unacc
either malleolus, occurs so rarely, that I
uninteresting to give a case, in which,
noticed, it took place. As some doub
presence of a fracture, I may state,
Harris, and afterwards Mr Stubbs, on
fully examined it, and were not able to
other symptoms of such injury.

ARTICLE IV.—*Further Observations on the Chemical and Physical Characters of the Urine of Pregnancy. By* J. W. GRIFFITH, M.D., F.L.S.

In the Number of this Journal for July 1842, I published some observations tending to disprove a conclusion arrived at by Dr Stark, (*Edin. Med. and Surg. Journal*, vol. lvii., 1842,) viz. that there existed in the urine of pregnant women, a new principle, "gravidine," the detection of which might be used to assist in the diagnosis of pregnancy. The observations I ventured to make have elicited a not very courteous reply in the September Number of the MONTHLY JOURNAL, 1842. My object now is to add more convincing evidence of the correctness of my former position, and to explain some of the difficulties obscuring this question. There is no difficulty in accounting for Dr Stark's discovering new principles in pregnant or any other urine, if he jumps at conclusions too hastily, as will be evident from the following observations among many others, extracted from his original paper.

On obtaining certain crystals from the urine, he says, they are "*probably lithic or purpuric acid, or their compounds;*" again, crystals, from their form *bearing a strong resemblance to cystic oxide;* others *appear to be triple phosphate;* and others are *supposed to be oxalate of lime;* again, he says, *cystine is soluble in acetic acid;* at p. 182, he says, "*the colouring matter of the globules of gravidine appeared to reside in their external envelopes, as by transmitted light the globules appeared transparent in the centre, with a faint opalescent hue on their circumference.*" This would be an entirely new method of proving the colouring matter of air bubbles, when viewed under the microscope, to reside in their external envelope!! as they are transparent in the centre and dark at the circumference, the intensity of the darkness varying according to the relative size of the globule to the field of the microscope. The statement made by Dr Stark in his last paper (p. 805), which "overturns our fine-spun theories," is by no means correct. When a few drops of nitric acid are added to pregnant urine, a precipitate of crystalline lithic acid always occurs; this, however, does not take place immediately, but if the solution be laid aside, in a few hours the crystals will be found adhering to the sides and lying on the bottom of the vessel; if, however, the urine be boiled, and then the acid added, it takes place more rapidly.[1] This, however, is no peculiarity of pregnant

[1] The form of crystal here deposited, has been figured by Dr Bird in the *Guy's Hospital Reports*, vol. vii., 1842, pl. 3, fig. 5.

urine, for it is found to take place in all urines, except in some occasionally passed in hysterical cases, granular kidney, &c., where the specific gravity is very low. A copious crystalline deposit of lithic acid never takes place when an acid is added to cold urine saturated with lithate of ammonia; the salt is too sparingly soluble to allow of a copious deposit of its acid. My reason for stating the portion of the natural sediment soluble in boiling water to be lithate of ammonia, was simply on account of its having been proved to contain lithic acid and ammonia. Lithate of ammonia does not resemble a boiled solution of albumen and fibrine in potash, in being precipitated in an amorphous form, as Dr Stark says; *lithic acid* alone is precipitated, and its crystalline form can be readily perceived under the microscope: no one at all acquainted with either the chemistry or microscopic appearances of urinary deposits will doubt this. In Dr Stark's original paper, he says, "*that kiestein is the name applied to the pellicle formed from the decomposition of the gravidine;*" whereas in his last paper he says, (p. 808), that "*the very same globules of the natural sediment afterwards rise and form the kiestein.*" Which of these two speculations or statements, without proof, Dr Stark intends to adopt, he does not state! The conclusion from the statements, "that the lithate of ammonia which is of greater specific gravity than urine, becomes lighter by remaining immersed in that fluid, and rising to the surface, forms an animal pellicle;" that I made use of any such "irrational" circumstance, ought not to have been formed from my paper, for I said distinctly, (p. 567), "that neither the lithate of ammonia, nor the globules, have any thing to do with the kiestein." But curiously enough, Dr Stark has himself made use of this "irrational circumstance," as he terms it, in explaining one of his statements, viz. (p. 808), that *the very same globules which constituted the natural sediment, rise to the surface and form the kiestein pellicle.*" Dr Stark says, (p. 808), "Ether will not remove a salt from its solution in water. Ether will not remove from water and hold in suspension saline particles which are heavier than water, though I assert that it will." I never said ether would remove a salt from its solution in water; the action of ether was tried upon the sediment, which could not have been in solution at the same time that it existed as a sediment, and as for my asserting that "ether will not remove from water and hold in suspension particles which are heavier than water," I say, and Dr Stark has proved, (first paper, p. 175), that it will; thus he says, "the sediment (which is heavier than water) still moist . . . . . was briskly agitated with an equal volume of sulphuric ether. On being allowed to rest, it separated into two parts, the upper or etherial being quite opaque, from the quantity of solid particles it held in apparent suspension." And, moreover, if time be not

allowed for the particles to subside, ether will remove from water and hold in suspension particles heavier than water. The statement by Mandl,[1] and repeated by Dr Stark, that by agitation with ether, all the globules can be removed, is untrue. When ether is agitated with milk, it dissolves fatty matter and retains in suspension a few particles; these are left on evaporation, and do not impair the transparency of the etherial solution,—the milk and globules remain below. Just so with urine mixed with milk.

Another false statement is, that kiestein and the natural sediment are the same. No evidences of lithic acid can be obtained from kiestein after it is carefully separated from the urine; again, kiestein is insoluble both in cold and hot water; whilst Dr Stark says "gravidine" is soluble in hot water. In Dr Stark's first paper he says, the gravidine globules cannot be distinguished from those of milk. In his last paper (p. 810), he says, "the gravidine, like other animal matters, consists of extremely minute globular molecules of equal size." Now, as the milky globules are so irregular in size, which irregularity is quite sufficient to distinguish one from the other, in his drawing he figures all the globules of the same size, or nearly so; the milk, as well as those from albuminous urine. And as he has represented them so nearly equal, of course we must imagine the same object-glass to have been used to magnify them; when, if such had been the case, a very different appearance would have been presented by albuminous urine (if correctly drawn). At p. 808, Dr Stark says, the gravidine does not differ in its microscopic character from flakes of coagulated albumen. He previously stated that gravidine could not be distinguished from the milk globules; two more totally different appearances cannot be imagined; the milk globules perfectly spherical, with a shining surface, and almost sparkling aspect, and perfectly distinct, and the irregular flakes of coagulated albumen, with a dull opaque granular surface. A magnifying power showing the milk globules perfectly well, does not show coagulated albumen to be composed of globules; the granular surface of the coagulated albumen is very similar to the surface of pus or mucus globules.

Respecting the views of those authors who believe that the proximate animal principles, albumen, fibrine, gelatine, &c., when apparently dissolved in water, are really only in suspension in the form of minute molecules or granules, and that when these solutions are coagulated by any re-agents, the granules or globules are merely rendered more opaque, and therefore more visible; that this is only an opinion of theorists, or is really unfounded, can be very readily proved as follows:—

[1] Traité Pratique du Microscope, p. 122.

1. Attenuate a solution of gelatine to sistent with its giving a decided opale galls, (which must be previously examin of particles of any kind.) Filter this so filtering paper several times, into a glass in diameter, after having allowed it to r Let it again repose after filtration. No centre of the upper surface of this flui microscope; a few irregular particles, there a granule or two may be perceived used, by dipping a clean glass rod into t of the filtered fluid, a drop may be sor shall not contain a granule or a particle their number may be counted; or by usi whole of the drop may be passed regular microscope, so as to enable a sketch to and their position, &c. Then dip a clea the tincture of galls, (the infusion mus touch the gelatinous drop; immediately cloud is produced, in parts which before rent, and without a single globule; shor globules previously, these will be seen to perfectly transparent. By carefully perf no one can fail to be satisfied that the tated from its solution, and that the pre remain perfectly unaltered.

2. A dilute solution of albumen may manner, but this is more difficult entirel if, however, the solution be not free, the may be noticed, and then the amount e of plates (copper and zinc) may be used points at the extremity of the conductin previously flattened, that they may lie u croscope. Now place the platinum po copper-plate in the focus, and having po into the cell, immerse the copper point a cipitate of irregular, amorphous, granul be perceived to occupy that place where perfectly transparent. Or, instead of t solution of hydrargyri bichloridum may gallæ was in the former experiment. Th that albumen and gelatine really are i Professor Müller's authority for my own *siology by Baly*, vol. i. p. 112.) He fir through a paper filter on which are laid solution of fibrine passes through; " detected in this fluid." Then, until we c

believe them absent. I firmly believe that the globules in all these liquids (albumen, gelatine, &c.) really are of a different nature from the animal matter in real solution, inasmuch as the reagents, whose reactions characterize the soluble part of the animal matter, leave untouched the insoluble or granular portions. I believe them (the globules) to bear a strict analogy to those in pus and mucus. When the albumen of a mucous secretion is coagulated by electricity, the globules remain unaffected; as also when pus is heated, the albumen in the albuminous liquor is rendered flaky and surrounds the globules, but by careful separation the globules can be seen perfect; just so with the globules of gelatine and albumen. The best mode of obtaining a good idea of the varying globules found in urine, is to examine the sediment of the urine of a patient who has irritable bladder, or chronic inflammation of that organ. Here mucous globules may be perceived, as elsewhere, undistinguishable from pus; also here and there a transparent globule or two, as well as the " ultimate granules or molecules in great abundance; also epithelium scales and cells in great abundance. If this urine cannot be obtained, take albuminous urine, or the urine of pregnancy—they will do equally as well—but the albuminous secretion will contain a very much larger proportion of epithelial scales and cells than the others.

The globules of the urine of pregnancy are not dissolved by boiling water. This may be proved by boiling some of the sediment, and whilst hot, putting some of it into a " live box," whose glass is very thin, the globules, &c. may then be seen as distinctly as before.

From a careful analysis of all the points connected with this subject, I deduce the following conclusions :—

1. That my last conclusions remain unaltered, viz., That a compound of lithic acid and ammonia, (perfectly soluble in water,) and known by chemists as lithate of ammonia, is present, mixed with globules, in pregnant urine.

That pregnant urine contains globules as well as the amorphous lithate, the same as those found in irritable bladder.

That a pellicle of kiestein forms on the surface of pregnant urine.

That neither the globules of the natural sediment, nor the lithate, have any thing to do with the kiestein.

2. That " granules and ultimate molecules" exist in all urines, and increase in quantity with the irritability of the bladder, and that these granules cannot be distinguished from those of the sediment in the urine of pregnancy.

3. That the animal matter which is acted upon by the characteristic reagents for detecting the different animal substances, as gelatine, albumen, &c., is really in solution, and the suspended globules are of a different nature, and that the supposition that these globules were rendered opaque by these reagents is unfounded.

4. That the kiestein does not resemble milk, inasmuch as the milk globules differ enormously in size, some being many times the size of others, whilst those of kiestein are nearly equal.[1]

5. Moreover, that the kiestein could never be mistaken for the "natural sediment," inasmuch as it does not contain lithic acid, nor can lithic acid be procured from it in any manner.

6. If the kiestein were formed from the sediment, as Dr Stark says, we should have a substance, notwithstanding it has been decomposed, yet remaining unaltered, which cannot be.

7. That the cause of Dr Stark's mistaking the natural sediment composed of mucus and lithate of ammonia for a new animal principle is, because he cannot separate one from the other, (2d paper, p. 207.)

8. That no substance would exist whose particles or granules are the same after decomposition as before they were decomposed; whose particles at one time contain evidences of lithic acid, and at another (although unchanged) give no evidences of containing it.

9. That the sediment of pregnant urine contains various globules, which cannot be distinguished from those passed by patients with irritable bladder.

10. The discoverer of gravidine affirms, in his second paper, 809, "that ether removes animal matters from all neutral, or nearly neutral fluids, as a thick mucilaginous-looking fluid, of precisely the same appearance as that removed by its means from the clear urine of the pregnant female and its natural sediment." Therefore, ether removes mucus from ordinary healthy urine as a mucilaginous fluid of precisely the same appearance as that removed by it from the clear urine of the pregnant female.

11. For reasons stated above, no "fourth animal principle does exist. No one can wonder at Dr Stark's microscope making coagulated albumen, with globules and "gravidine," all appear "undistinguishable from one another;" nor will any one wonder at his inability to distinguish amorphous lithate of ammonia from mucus, or other globules when mixed; after having perceived, in his first paper, (p. 186,) that his microscope is so achromatic as to enable him to discover in urine "a few globules of an oval shape and *large size*, with a clear centre and *coloured circumference*, the nature of which I have not yet determined!" How must "ultimate molecules" appear under such a microscope?

12. In concluding my remarks, I cannot help expressing my belief, that if the author of the "Gravidine Theory" had, before he commenced his observations, examined the natural secretion chemically, and its insoluble portions with a good microscope, he never could have issued such productions as those now commented upon.

9 St John's Square, Oct. 1842.

[1] These observations only apply to the London milk.

ARTICLE V.—*Account of a Child with Encephalocele, and Extrophy of the Urinary Bladder.* *By* DAVID J. TAYLOR, *Esq.*, *Surgeon, Lockerby.*

(*Communicated by Professor Simpson.*)

On the 21st of April last, Mrs M. was taken in labour with her second child, and in two hours gave birth to a female infant of rather less than ordinary size, though at the full period.

During labour, a soft, round body presented, which for a while was mistaken for the head, but was ultimately found to be a tumour, rather larger than an ordinary-sized fœtal head, attached, a little under the site of the posterior fontanelle, by a pedicle of three-fourths of an inch in length by an inch in diameter. The tumour itself was round, soft, and flabby, resembling somewhat a fresh bladder two-thirds full of water, and varying in shape with every change of the child's position. Covered by the common integument, it presented a perfectly smooth and equable surface, except at the part opposite the pedicle, where it resembled a puckered ring, surrounding a small nodule of cartilaginous appearance, from which diverged three whitish lines, resembling in their course the sagittal and lambdoidal sutures diverging from the apex of the occipital bone. At every other part it appeared very vascular, giving it a deep nævus-like colour. Such were the appearances the tumour presented to the eye, but when handled it felt less uniform, having at many points an irregularly hypertrophied feel. When percussed, it gave a distinct feeling of fluctuation; and on pinching up its thick and flabby outer covering, another of a firmer and tenser structure could plainly be felt and traced to about the middle of the pedicle, where it seemed to terminate; at least no fluctuation could be detected in the cranial half of the pedicle, while in the part beyond this, it was sufficiently evident without applying pressure to the tumour.

By compressing the tumour firmly on each side, something of a spongy or fleshy structure was distinctly felt as if floating loosely in its interior.

At birth, and on the second day after, pulsation, it was *fancied*, could be detected by grasping it firmly, but on the fourth day, and subsequently, several surgeons satisfied themselves that none existed. The cranial bones were perfect, in as far as manipulation could inform us; the sutures close; the anterior fontanelle scarcely distinguishable; the forehead rather low and abruptly recedent, but more so in appearance than in reality, the head being tightly pulled back, so much so that the occiput rested between the shoulders; nor could it be raised from

this position, which gave the appearance of total want of cervical vertebræ, an impression scarcely corrected by the anterior view of the neck, but by pressing laterally, their presence and extreme curvature was discovered.

Evacuations of meconium and urine took place at the usual time, and feces, &c., continued to be regularly discharged; indeed, the child's general health continued uninterruptedly good during the whole of the first month, though for the first eight days it subsisted entirely on spoon meat, refusing its mother's breast, although she had abundance of milk, which other infants sucked willingly. On the ninth day, on being applied to the breast of a nurse, it sucked her greedily, and afterwards its mother up to May 24th. The tumour had now doubled in size; the sac become more tense and vascular; the outer coat, which formerly moved freely on the inner, seemed now firmly connected to the latter; and the substance formerly felt lying in its interior could no longer be felt. During the whole of May 24th the child cried incessantly, refusing all food, and on the morning of the 25th was seized with convulsions, still crying incessantly between the fits. On the 26th it became comatose, convulsive stertors occasionally recurring. It now again refused the breast, but swallowed panado when it was put into its mouth, the secretions and evacuations continuing natural.

The bones of the head began to separate. On the 29th, the parietal bones were half an inch apart; the anterior foramen the size of a halfpenny; and now also I discovered the posterior fontanelle an inch above the neck of the tumour, about as large as a sixpence. The tumour kept rapidly enlarging; and when the sutures, on June 6, had again closed, it had become a third larger since May 24. Craving for food great; evacuations, &c. natural; coma continuing; constant twitching of all the voluntary muscles; mouth drawn slightly to left side; countenance varying from paleness to lividity; pupils immoveably dilated before the strongest light; the body little larger than at birth.

She remained without any appreciable change, except the gradual enlargement of the tumour, whose diameter increased at the rate of about an inch per week, till on the night of the 16th August, when the integuments gave way, and a small quantity of fluid oozed out. At two A.M., on the 17th, she expired.

Autopsy. — In appearance the tumour felt full and tense; was of a deep purple colour; desquamation had commenced at several parts; over its entire surface it was dry and scurvy; an oozing of serum still continued from an ecchymosed spot on its lower surface, though no distinct opening was visible.

On puncturing it, three pounds of brownish fluid escaped; and on slitting up the sac, it was found lined with the dura mater and arachnoid membrane; the fluid having been contained be-

tween the layers of the latter. The former was found very little altered; but the latter was greatly and irregularly thickened, here and there, by depositions of lymph, giving it in several places an elastic, or rather, gelatinous appearance.

In the centre of the tumour, and through the pedicle, projected a hernia cerebri, of the size of a duck's egg; resembling an egg also in shape, and covered by the arachnoid and pia mater; of normal appearance, except on the lower surface, where, by depositions of lymph, a soft elastic membrane, of about an inch and a half in breadth, connected it throughout its whole extent, with the arachnoidea reflexa lining the sac. On making an incision into the hernia, an ounce of serum escaped, resembling in colour that surrounding the protrusion, leaving a pouch, with walls of about half an inch in thickness. When the neck of the sac had been dissected off, the protrusion was seen to have taken place through a hole in the occipital bone, of three quarters of an inch in diameter, situated about an inch below the apex of the bone in the median line. On removing the protruded portion of brain, it was found to weigh about two ounces. The edges of the aperture were thin, and serrated; the inner table and diploé wanting for half an inch round its margin. About midway between the apex of the bone and the foramen just described, existed another, of about half the size of the former. Through this no protrusion had taken place, and the dura mater could be felt tightly stretched across its inner aspect; its edges also were serrated.

A suture stretched from the edge of the larger aperture to the foramen magnum. The spinous processes and arches of the cervical vertebræ were wanting, and serum was contained within the membranes; the dorsal and lumbar vertebræ were perfect, as were all the cranial bones, except the occipital.

I regret that I cannot give the appearances within the skull, as the child's father, who was present during the inspection, would on no account allow the head to be opened. I can only state, that it was the opinion of myself, and two other surgeons who were present, that no water was contained between the bones and the surface of the brain; that fluid was contained within the ventricles, a few tea-spoonfuls escaping through an aperture of the size of a crow-quill, in the centre of the portion of incised brain, which filled up the opening through which the hernia took place.

The same child was also the subject of a malformation of the genito-urinary organs. The pyramidal muscles, integuments of the pubal bones, anterior wall of the bladder, nymphae, upper half of the labia pudendi, and the urethra, were wanting. During life, the urine was seen passing *guttatim* from the mouths of the ureters. The vagina was perfect.

PART SECOND.

REVIEWS.

Fletcher's Pathology.—The volume for this year having already swelled inconveniently beyond its legitimate bulk, we are reluctantly obliged to abandon an intention expressed in a former Number, of continuing the review of *Fletcher's Pathology*, edited by Drs Russell and Drysdale. Although this work contains some questionable, and, in our opinion, some erroneous doctrines, we recommend it to our readers, on account of the large amount of useful information which it contains, and the ability which characterizes the writing, both of the author and his accomplished editors.

Want of room, (arising partly from the space occupied by the index in the present Number,) must be taken as our apology for delaying a criticism of several other works. Our general rule is, to allow the other departments of the Journal to encroach as seldom as possible on the *Periscope*, which we know to be the most acceptable part of our periodical to the majority of readers.

PART THIRD.

PERISCOPE.

ANATOMY AND PHYSIOLOGY.

Precocious Menstruation in a Girl Two Years Old. By Dr Carus, of Dresden.

Examples of precocious menstruation are by no means rare; but there are few recorded which can be compared with the present case. Christina Theresa, a natural child, was born in the mountains of Saxony: neither her father nor mother were of robust constitution. She was scarcely a year old, when she began to grow rapidly. At the end of her second twelvemonth, the catamenia appeared, and have continued ever since to flow regularly once a-month. The Academy of Medicine of Dresden sent both for her and her mother, and in order to examine more particularly into the case, kept them under their observation during several weeks. The infant was 37 inches 3 lines long. The mammæ were firm, like those of a strong

girl of 16. Her body was stoutly made, and the genital organs were covered with dark-brown hair. Her physiognomy and tone of voice were childish, which contrasted singularly with the strength of her body. Her intellectual functions were equal to those of a child three years old, and her head was covered with beautiful dark-brown hair.—*Allgemeine Zeitung für Chirurgie.*

Case of a Third Dentition.

One of the daughters of the Countess Z. had her milk teeth renewed at the age of six. Nothing remarkable was observed during the first dentition, the permanent teeth having in the usual manner replaced the first set. When the patient had attained the age of twelve, to her own and her parents' equal distress, the incisors fell out. Their places were however soon observed to be filled by new teeth; and at the end of twelve months, all the teeth that she had gotten between the ages of six and twelve had been replaced by others.

Examples of third dentition are not rare in the annals of medicine; but the cases recorded (with the exception of one) differ from the above in this, that they were always in old people, and that the third dentition was confined to one or two teeth.—Abridged from *Gazette Méd. de Paris*, 18th September 1842.

Transposition of the Abdominal Viscera to the Thorax. By Dr Forliveri of Bologna.

At the meeting of the Medico-Chirurgical Society of Bologna, Dr Forliveri read the case of a peasant, forty-two years of age, who died with symptoms of acute enteritis. During life, the abdominal parietes were much retracted; so much so, that the vertebral column could be easily felt, while the thorax appeared much larger than natural. At the post-mortem examination, the cavity of the chest was found to contain a great part of the intestinal canal, the spleen, the omentum, and the stomach. An opening existed towards the left side, in the anterior tendinous portion of the diaphragm. Dr F. is of opinion, that there must have been a congenital irreducible diaphragmatic hernia. Neither he nor the journal from which this abstract is taken enter into any minute details of this interesting case.—*L'Examinateur Méd.*, 15th July 1842.

PRACTICE OF PHYSIC AND PATHOLOGY.

[1]Microscopical Observations on the Morphology of the Pathological Fluids. By David Gruby, M.D. Translated from the Latin by S. J. Goodfellow, M.D., &c.

The observations were made during day-light by Plössel's microscope, the diameter of the objects being increased 400 times. For diluting the ob-

[1] Observationes Microscopicæ ad Morphologiam Pathologicum, auctore Dr Davide Grüby. Morphologia Fluidorum Pathologicorum. Tomi primi pars prima. Accedunt Tabellæ septem et Tabulæ litho-sculptæ quinque. Vindobonæ, apud Singer et Goering, 1840.—The Translator has thought it better to omit the short introductory essay, in which the author has given a cursory review of the various discoveries in anatomy, by means of the simple and compound microscope, with a list of the names

jects, distilled water was used, and for changing their physical characters pure pharmaceutical re-agents.

Of Normal Mucus.—Mucus taken from the healthy mucous membrane of the nostrils, settles into a greyish-white fluid, somewhat thick, easily drawn into threads, dries when exposed to the air, leaving a hard, fragile, transparent, greyish scale. Water does not dissolve it; rubbed with water for a long time it is loosened, softened, and swelled, and it is no longer to be drawn into threads. A small portion spread upon glass, and examined by means of a microscope, appears:—1. Amorphous and greyish-white, with greyish-black points irregularly scattered in it, (which I believe to be heterogeneous substances, from the air brought into contact and united with it.) Agitated for some time in distilled water, the blackish grey points are dissolved. 2. Moreover, there are observed yellowish-white, round, or oval globules, two to four times more transparent than the red particles of the blood. Globules taken from the anterior part of the mucous membrane of the nostrils, appear without primitive molecules; but, investigated from the posterior part of the same membrane, they appear endowed with very small ones; dried in air they are rendered irregular and more pellucid; the primitive molecules disappear at the same time; exposed to distilled water, they are not changed, nor are their envelopes broken. 3. It contains lamellæ and cells of epithelium of a greyish-white or whitish colour, transparent, of an oblong or angular form, 1-40th to 1-30th‴ long, 1-50th to 1-100th‴ broad; the greater part of their surface is irregularly folded with here and there very small molecules deposited; they inclose a central nucleus, or a globule less transparent, exceeding by two or three times the size of the blood-discs, mostly oblong, less frequently round; dried in air, the little cell of epithelium becomes transparent, the opaque nucleus remaining. Distilled water does not change them. If the cells of epithelium have been treated for about five minutes with a small drop of concentrated acetic acid, sp. gr. 1030, I have observed no change. The same occurs with solutions of oxalic and tartaric acids; sulphuric acid 1090; diluted nitric acid 1170; also with diluted hydrochloric acid 1070, and liquid chlorine 1000. The same occurs with hydrochlorate of ammonia, hydrochlorate of barytes, nitrate of potash, nitrate of barytes, sulphate of potash, acetate of ammonia 1015, acetate of potash 1200, and soda, with solutions of sulphate of iron and sulphate of copper; but nitrate of silver tinges the cell of a brownish colour. Concentrated muriatic acid 1200, nitric 1170, sulphuric 1090, butter of antimony and oil of tartar, quickly render the cell of epithelium perfectly pellucid, so that it is withdrawn from all further observation.

Of Mucus produced from irritation of Mucous Membranes.—The mucus of an irritated mucous membrane of the nostrils is white, pellucid, scarcely more consistent than the albumen of a hen's egg; exposed to the air the greatest part evaporates, and a very thin pellucid lamella remains. Distilled water is easily mixed with it. Under the microscope, besides a few cells of epithelium, it is seen to contain round globules from four to five times larger than those of the blood; a few of them are of a white colour, perfectly round, with extremely thin pellucid envelopes, enclosing very small molecules.

Of Mucus produced from Catarrhal (i. e. lighter) Inflammation.—Mucus from catarrhal (i. e. milder) inflammation of the mucous membranes of the nostrils, conjunctivæ, fauces, larynx, bronchi, urethra, vagina, and of alimentary tube, has a greater consistence than that produced from *irritation*

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and works of the principal anatomists who have had recourse to their aid in the prosecution of their anatomical researches; because he feared that it would occupy too much of the space allowed to him in this Journal, without a corresponding advantage to the reader.—*Note in the Microscopic Journal.*

of these membranes. It is transparent, very tenacious, yellowish-white, thick, drawn out to a thread-like glue, dries more slowly in air, and a turbid, greyish-yellow elastic lamella remains. In distilled and river-water it falls to the bottom (if bubbles filled with air shall not have been mixed with them); exposed for a longer time to water, it is not changed, except that it swells somewhat and becomes whiter; exposed to a flame it burns and emits an empyreumatic odour. Investigated by means of the microscope, I beheld:—1. An amorphous greyish-white mass, not changeable by water. 2. Spherical whitish-yellow globules, the larger the quantity in the mucus the more intense the yellow colour; the diameter of the globules taken from a catarrh of the larynx exceeded eight times that of the blood-discs. These globules intimately cohered with the amorphous mass in which they appeared immersed, and were composed of a very thin diaphanous envelope, which was easily broken when made tense by shaking it with water; not *agitated* in water it is not broken, on account of the tenacious amorphous mass in which the globules are found immersed. In the middle, and oftentimes out of the centre towards the edge, is seen a perfectly round vesicle, which exceeds in size twice the diameter of the blood-discs; it either appears to be empty or filled with some pellucid fluid. This vesicle, on account of the place which it occupies, may be called the central vesicle. In every globule there appear little points or very small globules, scarcely larger than one-sixth the diameter of the blood-discs, transparent or diaphanous, called molecules, and dispersed without order. The quantity of these globules, and their magnitude, vary. We shall speak in another and more appropriate place concerning these. When the globules have been dried, they change their round form into that of an irregular polyhedron, marked with more pellucid margins; in the middle there remains a granular yellowish substance, which surrounds a central vesicle, at first turgid, but by drying becomes changed into a white pellucid spot. Sometimes two central vesicles are seen.

Of Mucus produced by a more intense Inflammation of Mucous Membranes.—Mucus secreted from mucous membranes affected with a more intense inflammation, is of a deep yellow colour, easily drawn out into threads without any order. It is opaque, and when dried, leaves a yellow, transparent, brittle substance; in distilled or river-water it sinks to the bottom, and forms flocculi; agitated with water it renders it turbid, but I saw the flocculi themselves, of a white colour, sink to the bottom. The flocculi, washed a long time in water, did not render it more turbid; those made of a lighter colour swam upon the water, and enclosed even then a few globules. The mucus, when dried, burnt with a flame. The mucus from ophthalmo-blennorrhœa, acute urethral blennorrhœa, acute vaginal blennorrhœa in a puerperal woman is here alluded to. Investigated by the microscope this mucus consists:—1. Of a small quantity of a whitish amorphous mass, not soluble in water. 2. Of innumerable yellow globules, partly with, partly without central vesicles. These globules, exposed for a long time to distilled water, swelled and became whitish. After the first minute they are broken, and the contained molecules are sometimes quickly, at other times slowly expelled, then sometimes leaped out, as if they were controlled by a physical law. They did not accumulate about the unchanged central vesicle, but every where exercised, for a long time, a molecular motion. 3. Cells of epithelium were rarely observed in this mucus; and if any occurred, they were round, full, and here and there with difficulty distinguished from the globules of mucus.

Of Mucus from Mucous Membrane affected with Chronic Blennorrhœa.—Mucus from chronic blennorrhœa of the vagina and urinary bladder, is yellowish-white, but little ductile, easily renders water turbid, and white flocculi remain in contact with the bottom of the vessel. I observed other properties like those with mucus produced from a more intense inflammation of

membranes. Under the microscope there appear :—1. A small quantity of a ductile amorphous mass. 2. Very copious yellowish-white globules, of which some seem composed of an envelope, very small molecules, and central vesicles, some of an envelope and central vesicle, and, lastly, others of very small molecules only, and destitute of all covering.

Of the Lochial Discharge.—Shortly after parturition, the lochial discharge, rightly investigated, exhibits a sanguineous colour, gives out an animal odour, is but little ductile, and dried in the air leaves a red, friable mass. Treated with distilled water, three substances are observed :—1. A reddish-white soluble substance, (Hæmatosine.) 2. White flocculi quickly falling to the bottom, (Fibrine.) 3. Yellowish-white flocculi suspended in the water, (Vaginal mucus.) Investigated by the microscope, it consists :—1. Of a ductile amorphous mass. 2. Of blood particles. 3. Of mucous globules, composed of an envelope and primitive molecules. 4. Of epithelium. When we compare mucus secreted from the vagina during parturition, which consists of small globules, enclosing primitive molecules, also, of small globules, enclosing two larger molecules, with mucus secreted 13 hours after parturition, we shall perceive an essential difference between mucus produced from the healthy vagina, and that from the same organ when irritated.

On the *second* day, globules endowed with central vesicles, appear; and, in proportion as the uterus shall have been injured, so in proportion will these globules be found increased in quantity. As the discharge becomes paler, the number of blood particles decreases, and the quantity of the larger globules on the contrary, increases.

On the *third* day after parturition, the reddish discharge contains many yellowish-white globules, provided with central vesicles and molecules; the quantity of blood particles decreases, and that of the ductile amorphous mass increases, (proper mucus.) On the *fourth* day after parturition, the discharge is but slightly reddish, contains white flocculi, easily drawn into threads (of mucus), in which there are irregular, more obscure globules (corrugated epithelium), and some with central vesicles. A very few blood-particles are also contained in it. On the *fifth* day after parturition, the mucous discharge is yellowish-white, the globules which are found in it are white, and even ten times larger than the blood particles. There are very few or no small molecules included in them, and the central vesicles have disappeared, but I observed an increased number of larger primitive molecules in them. From the *6th* to the 13*th* days, the lochial discharge is white, consists of white, perfectly round globules, provided with the smallest primitive molecules, without central vesicles or larger molecules. I have observed peculiar forms in a diminished discharge of the lochia, when inflammatory puerperal fever has attacked the mother; the central vesicle, for instance, exceeding by four or five times the magnitude of the blood particles, has been provided with primitive molecules, the globules, on the contrary, enclosing this vesicle, being entirely destitute of them. Here and there, however, when the secretory process had been retarded, or when a more difficult parturition produced metritis, the central vesicles were found in the yellowish-white lochial discharge on the 5th and 8th days after parturition, and even beyond that time.

Of Dysenteric Mucus.—Mucus, discharged from the intestine in the commencement of the dysenteric process, is limpid, easily drawn into threads, scarcely differs from the mucus produced from a mild diarrhœa; but the dysenteric process increasing, reddish and very thick mucus is evacuated. The red colour is caused by a mixture of the red particles of the blood with the mucus produced from inflammation of the mucous membrane. In the acme of the disease, the mucus is seen altogether as green ; it no longer encloses globules of blood, but white, almost pellucid, globules deprived of all primitive molecules, having large central vesicles filled with the smallest molecules. (I have observed this form in the lochial discharge of a puerperal patient, and in the purulent exudation of recent purulent peritonitis. I

have, moreover, beheld peculiar green bodies intermixed with the dysenteric mucus.)

Of Sputa.—The mucus ejected from coughing differs according to the character, extent, and stage of the pathological process; hence I shall first speak of the sputa from normal inflammation; secondly, of sputa from anomalous inflammation, and also of the appearance of sputa produced by the tubercular process.

1. *Of Sputa generated by Normal Inflammation.*—Sputa produced in the commencement of a catarrhal affection of the air-passages, are found to be white, pellucid, thin, easily drawn into threads, and here and there they disclose within themselves a few small flocculent greyish nubeculæ. The quantity of these sputa bears a direct relation with the extent of the pathological process.

Investigated by the aid of the microscope, the white pellucid fluid contains a very few round globules, filled with primitive molecules, and many cells of nucleated epithelium; the globules as well as the cells appear immersed in the pellucid fluid, (proper mucus), but the greyish flocculi are composed of copious round globules filled with primitive molecules, and linked together with the proper mucus.

The catarrhal process increasing, the greyish flocculi receive an increase, which at length, from a yellowish-white, become tinged of a deeper yellow colour; the more the flocculi increase, the more the quantity of white fluid mucus decreases, the sputa becoming globose, and extremely tenacious.

The flocculi, investigated under the microscope, are composed of round globules filled with primitive molecules and a central vesicle. These globules appear linked with extremely tenacious mucus; but the white mucus, (properly mucus), is a white amorphous substance, easily drawn into pellucid threads, which disclose cells of nucleated epithelium, and a few globules of a yellowish-white colour, endowed with the smallest molecules and a central nucleus. The inflammatory process decreasing, the quantity of globular sputa decreases; they acquire a somewhat whitish colour, until, the inflammatory process being finished, all yellow secretion ceases.

Microscopico-Chemical Investigation.—The globules contained in yellow mucus consist of smooth, very thin envelopes, in which again primitive molecules, and a single or double central vesicle are seen. The magnitude of the globules exceeds by six or eight times that of the blood-discs; but the diameter of the central vesicles scarcely equals it.

Globules exposed to distilled water increase in volume, although they may all have been freed from the adhering mucus, the envelopes break, the central vesicle and primitive molecules remaining.

Acetic acid 1030 dissolves the envelopes and primitive molecules, but the central vesicles remain intact, aye and more than this, they are seen more clearly, but their number increases from one to six.

Oxalic acid dissolves the envelopes, the central vesicles, from two to five in number, remaining.

Tartaric acid quickly dissolves the envelopes; the central vesicles, observed of a white colour, remain.

Diluted nitric acid 1170, corrugates the globules, and tinges them of a deeper yellow colour.

Diluted hydrochloric acid 1070, corrugates the globules.

A dilute solution of the nitrate of silver 1075, corrugates the coverings of the globules, and leaves them tinged of a yellowish colour.

Concentrated solution of nitrate of silver 1275, at first dissolves the coverings and the primitive molecules, the central vesicles remaining, from one to four being seen clearly; but in a longer time the central vesicles themselves become dissolved.

Solution of pure potash 1350, dissolves the globules, and a white pellucid mucous fluid remains.

Spirit of caustic sal ammonia 0,980, produces no change.

Lime water occasions no change.

Spirits of wine 0,830, contracts the globules.

In crude pneumonic sputa, white, irregular, turbid particles are found, intermixed with mucus, which are composed of an entire patch of cells of non-nucleated epithelium, joined to each other in symmetrical order, on whose surface irregular globules (plastic exudation) are found.

Tenacious mucus of yellow globose sputa, which embrace or enclose the globules above described, appears, when submitted to the microscope, white, almost pellucid, and free from globules.

Distilled water does not produce any change in it.

Treated with nitric acid 1170, it forms yellow filaments, decussating among themselves in different directions, and marked with irregular, obscure margins.

The same happens if it have been treated with hydrochloric acid 1070.

Solution of nitrate of silver 1075, forms filaments, which after a little time are dissolved.

Concentrated acetic acid 1030,
Solution of oxalic acid,
Solution of tartaric acid,
} occasion no change.

2. *Of Sputa generated by Anomalous Inflammation, and from the Tubercular Process.*—Sputa generated by the tubercular process, differ according to the nature, the extent, and the stage of the disease. The tubercular process is three-fold:—1. Miliary tubercular process. 2. The tubercular process of infiltration. And, 3. The tubercular process, forming solitary tubercles, distinguishing by turns the characteristic sputa which each process forms.

3. *Of Sputa ejected from the process forming Solitary Tubercles.*—A solitary tubercle, generating in the texture of the coats of the air-tubes, or in the cellular tissue surrounding the bronchi or blood-vessels, only affects the pulmonary secretion so as to increase it, and also presses upon the coats of the intermediate and capillary blood-vessels, as well as upon those of the minute bronchial ramifications, so much as to impede or totally put a stop to the circulation of the blood, as well as air in that small portion of lung lying next the tubercle; the product generated from the irritation of the mucous membrane, differs in no respect from that of a mucous membrane irritated by the application of cold; therefore there is as yet no *qualitative* difference between the sputa of an incipient catarrhal process, and those of a commencing tubercular process; but a *quantitive* difference is given, for the sputa ejected from an incipient catarrh, are more copious than those which were expectorated from the irritation of a solitary tubercle.

The tubercle increasing, the quantity of sputa increases until the tubercle becomes softened, which having taken place, besides the concocted or puriform sputa, there are found yellowish-white and finely granulated particles mixed with the white mucus; or, yellowish-white oval lenticular particles, whose longest diameter scarcely exceeds the half of a Viennese line, adhering to the bottom of the smooth vessel in which the sputa are accumulated.

It is seen by the microscope, that these yellowish-white particles are a compound of roundish or ovate lenticular spheres, gashed globules, and mucus. The lenticular spheres are from the same size to ten times larger than the globules of pus; they present, for the most part, a smoothish surface, and in almost all, obscure striæ, running concentrically, are detected. Some of these spheres are fissured once or oftener from the periphery towards the centre, the broadest part of the fissure continually decreasing, until it altogether ceases far in towards the centre. They are easily broken, and break with angular margins; whereas, if one look closely at the face of the fracture, he will perceive the lenticular sphere to be composed of concentric lamellæ, resembling a bulb of garlic. The lenticular spheres fall to the bottom in dis-

tilled water. Dried for a long time in air, they are not changed, with the exception of a slight diminution of their diameter. They are not changed by distilled water. A solution of caustic potash dissolves them. They are in no respects changed by liquid ammonia 0,910. Concentrated acetic acid 1030, and solutions of tartaric and oxalic acids produce no change. In dilute nitric acid all their diameters are enlarged from three to five times, and the concentric striæ disappear; they swell like inflated bladders, become semi-transparent, are bent in a different manner, and ultimately disappear altogether. They are not changed in hydrochloric acid 1070. Carbonate of soda, acetate of lead, prussiate of potash, and ammoniacal sulphate of copper, do not change them. Solutions of the nitrate of silver 1275, change them in the same manner as nitric acid, only they do not disappear so quickly. Infusion of galls, and pure alcohol 0,830, produce no change. As long as the softened tubercle shall not thoroughly have been thrown off, so long are the lenticular spheres mixed with the sputa. The tubercle being expectorated, the sputa again differ according to the difference of the pathological process; for, if the tubercular process has been local, the parietes of the cancer secrete globules of pus, which are ejected in union with the mucus of the irritated or inflamed mucous membrane of the air-passages, until the contracted parietes and the cavern, forming a cicatrix by granulation, become consolidated, the lenticular spheres being no longer detected in the sputa. But if the tubercular process (the individual labouring from a tuberculous dyscrasis), is not quieted by the ejected tubercle, the lenticular spheres are found constantly intermixed with the sputa. They are seen in the tuberculous sputa, besides the lenticular spheres now described, and white tenacious flocculi before noticed, white mucous and granular-looking shreds. Investigated by the microscope they contain cells composed of tetra or pentagonal margins, with obscure or unequally yellow centres, the striated margins having the diameter and texture of the intermediate vessels (capillaries.) Besides these cells, there are here and there found yellow cylindrical fibres marked with black transverse lines (muscular fibres). Sputa produced from other inflammations of an anomalous character, will be treated elsewhere.

Of Urethral Blennorrhœa.—The fluid, which is secreted in the beginning of a catarrhal inflammation of the mucous membrane of the urethra, is white and not easily drawn out; contains very few globules, which are four times larger than those of the blood, and composed of a smooth, transparent, very thin envelope, filled with the smallest molecules. On the 3d day of the disease, the secreted fluid is observed to be thicker, and of a yellowish-white colour. It is composed of numerous globules, for the most part perfectly round and yellowish-white, which are transparent, smooth, very thin envelope, the smallest molecules, and here and there a central vesicle. On the 9th day after the infecting coitus, the puriform fluid in preputial blennorrhœa contains numerous yellow globules, three or four times larger than those of the blood, some of which are seen composed of an envelope and the smallest molecules, others of an envelope, the smallest molecules and the central vesicle perfectly round or oblong. On the 21st day, the globules contained in the yellow secretion are very numerous, and are composed of a smooth envelope, the smallest molecules, and the central vesicle. They rapidly swell in distilled water, the envelope quickly breaks, and the primitive molecules are seen accumulated around the central vesicle. On the 30th day, the thick fluid is perceived of a yellow colour, and few globules; and on the 40th day after the infecting coitus, very few globules, and those for the most part ruptured, are found in the white and thinnish fluid.

Of Pus.—I have considered the following questions concerning pus, which are sufficiently trite, indeed, but as yet have not been performed with the penetrating examination which the difficulty of the subject required, in order to ascertain:—

1. What is understood by the name of pus?

2. If a material difference can be shown between pus from a woun thological organ), and pus from the surface of an organ whose contin uninjured?

3. Whether a material difference is to be observed between pus and n

4. If the product from the commencement of suppuration to the ter tion of the process be always the same!

5. What material changes are observed between pus produced f normal process of suppuration, and that produced from an anomalous pr

Pus secreted by an abscess is a yellow fluid, of an agreeable animal of the consistence of cream; that from the process of inflammation or tion is composed of globules three or four times larger than those blood, and a fluid. Allowed to rest, a double stratum is perceive upper one being very fluid, the lower thicker.

The inferior stratum, submitted to the microscope, is perceived to dowed with yellowish-white, and perfectly smooth globules, joined to by a viscid fluid. The globules exceed in size three or four times t the blood; most of them are round, some are oblong, others wedge-s They consist of a transparent envelope, with usually one, sometime but seldom with no vesicle inclosed in them; the diameter of the vesicle scarcely exceeds that of the blood-discs, the remaining space i by the small and large primitive molecules.

The coverings exposed for a long time to distilled water, perceptibly and are ultimately broken, the central vesicle, surrounded by the pri molecules, remaining; but this being deficient, the congregated pri molecules alone remain.

Globules exposed for a long time to the air have yellow polygonal gins, which surround a white pellucid space.

Acetic acid sp. gr. 1030, renders the globules diaphanous, the co sensibly vanish, with from two to five nuclei, which at first were not seen, remaining; the nuclei, which have an amber-yellow colour, are and their magnitude is in indirect relation to their number. Hence, you perceive five nuclei, their diameter scarcely exceeds one-third of the blood globules; but when two only are seen, their diameter e the half of that of the blood globules.

The nuclei within the margin have a black ring, and within this the another black ring, inclosing a central lucid spot.

The nuclei swim together in a certain symmetrical order in the sur ing fluid, which being evaporated, they disappear, and nothing exce rudiments of the envelopes, previously softened in acetic acid, again into view; they bear an irregular angular or spherical figure, with thin black or punctated margin, showing in their centre a white p spot surrounded by extremely fine points.

Oxalic acid produces the same change as acetic acid.

Tartaric acid quickly produces the same changes.

Solution of caustic potash 1350, quickly dissolves the globules, and a white fluid resembling mucus, which is easily drawn into thread when dried, no form is any longer seen.

Caustic ammonia does not change the globules.

Diluted nitric acid 1170, corrugates the envelopes of the globule forms one contracted central nucleus, which is distinctly to be seen.

Diluted hydrochloric acid 1070, like nitric acid, corrugates the env and one moderately clear and contracted nucleus is seen.

A solution of nitrate of silver 1275, renders the coverings transpare remaining contracted nucleus being clearly seen.

In alcohol 0,830, the envelopes of the globules become corrugat nucleus, when there is one only, equals twice the diameter of the blo bules; or when three nuclei are found, they are even five times smalle the blood globules.

The upper stratum is more fluid, is endowed with much fewer globules of pus, and a greater quantity of the white pellucid fluid. The fewer globules it contains, the whiter is the colour; and the more of fluid (serum) is contained, the more fluid the stratum is found to be.

In large subcutaneous rheumatic abscesses, the different fasciæ, cellular tissue, and the smaller vessels and nerves, are found infiltrated with pus.

Globules of pus found in the parenchyma of organs, evidently separate its fibrils and fibres one from another, and surround them; hence the colour of the parenchyma is changed to yellow, reddish yellow, brownish-yellow, greenish-yellow, according to the quantity of pus globules and the colour of the organ in its healthy state; thus, for example, cellular tissue, which is white, when infiltrated by pus, becomes yellowish-white, or from white, greenish-yellow. The liver, also, when infiltrated with pus, from reddish-brown, becomes yellow; the kidneys, from red, change to a yellow colour. By this infiltration, the texture of organs loses much of its cohesion and tenacity, the organs are consequently rendered friable and soft, until the number of the globules shall have so increased, that the lacerated fibrils completely dissolve, and, mixed with pus, are inclosed by the surrounded texture, which is as yet firm. This state of things is called an abscess. Some of the globules of pus which have been shut up for a long time in an abscess, are composed of an envelope filled with very small molecules, others of the small molecules only.

But the globules taken from a metastatic absces, thirty-six hours after death, were destitute of all covering.—Globules taken from an abscess of the liver thirty-four hours after death, consisted of an envelope filled with the smallest molecules. Pus from a wound suppurating torpidly for twenty years, with a base furnished with hard and long granulations, was yellowish-white, contained a few globules, and a great quantity of cells of epithelium in different states of evolution.

Exudated purulent peritoneal fluid of a yellowish-green colour, besides globules of pus with an envelope filled with small and large molecules, contained other globules which were destitute of all covering, and transparent, and of epithelium, beset with larger molecules. The yellow flocculi swimming in peritoneal exudation, are composed of coagulated fibrin, enclosing globules of pus. Recent peritoneal exudation contains globules whose central vesicle is provided with the smallest molecules.

Of Variola.—1. *Modified Variola.*—Of the material changes which we find in the products of this pathological process, some take place during the formation of papulæ or of vesicles, and others during the formation of pustules.

Being preceded by three days of inflammatory fever, the red spots, in about twenty or thirty hours, appear changed into papulæ; and the limpid fluid, in small quantity, which was extracted from the affected epidermis, offered an alkaline re-action; under the microscope, a few larger, white, almost pellucid globules appeared in it, together with animalcules composed of a globose or conoid trunk, very thin neck, which was crowned with a small hook, with which they exercised a continuous motion, by turning the neck forwards and backwards.

On the *third* day of the eruption, the limpid fluid extricated from the papulæ contained, besides the molecules, a few pellucid globules, exceeding by two or three times the size of the blood globules, abounding with primitive molecules, which scarcely exercised any molecular motion. The animalcules, at one time curved, at another conoid or cylindriform, the hook being retracted, sometimes exercise a very quick circular motion.

The molecules without the globules are of different sizes; the smallest which are visible scarcely exceed the 1-20th, the larger 2-20ths to 4-20ths, and the largest 5-20ths to 10-20ths of the size of the blood discs. The smallest globules scarcely exceed in size 10-20ths to 19-20ths of the blood globules.

On the *fourth*. *fifth*, and sometimes on the
limpid fluid which is found in the vesicles ir
bules almost pellucid, with large and small
they are provided with central vesicles. Th
bules exercise a powerful motion even with
velopes are not easily broken.) Animalcule
described, also appear.

On the *fourth*, *fifth*, and sometimes on the
eruption, the fluid contained in the vesicles,
milk. The globules of pus, turgid with the
in number, and exhibit a yellow colour. G
are seldom seen in this fluid, and the molecul
fat individuals, there is sometimes found in
large, round, or oval globules are seen, excee
four to six times, endowed with the larger m
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low colour, and has scarcely any perceptible
many yellow globules, the envelopes of whic
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of a yellow colour, and the quicker the enve
become irregular, some corrugated by drying
broken, dissolve, and the molecules which th
dispersed without order. The molecular mo
the fluid may be mixed recent and older cel
until all the fluid which held the globules ar
evaporated, and inflammation having ceased,
pus is continually secreted, until ultimately
a hard crust, which we believe to be made up
large molecules, a few globules of pus, conoid
epidermis.

2. *True Human Variola.*—True human va
I have observed this severe pathological proc
pellucid lymph from papulæ, here and there
day of the disease, white globules, not perf
one side, as if torn from the place of their gro
times the magnitude of the blood globules,
provided with a pellucid covering and very
moreover, formed in this fluid, small white or
few globules of the blood.

Death, which put an end to the disease on
to my sorrow, any ulterior investigation.

Of Lymph and Plastic Exudation.—The p
of the living blood, united to serum and the r
The living blood circulating in the organism,
croscope, appears composed of two elements:-

a Of globules;[1] and,

b Of a pellucid fluid, in which the globules

Fresh blood taken from the circulatory pas

[1] Particles or discs would be the more correct
since all *recent* microscopical observers agree in op
but, as the author in the original work has given t
lator, from a wish to deviate as little as possible fr
lowed it to remain.

deep vessel, and kept at rest for some time at a moderate temperature, coagulates, and its constituent parts separate from each other.

The globules, on account of their great specific weight, fall to the bottom; but the liquor sanguinis also divides:—

1*st*, Into plastic lymph (fibrine) which coagulates, and united with the globules, forms the clot, but accumulated on the surface without globules, forms the so-called phlogistic buffy crust; and,

2*dly*, Into serum, in which the clot floats.

The plastic lymph, on account of its lighter specific weight, coagulates, and constitutes the superior part of the clot (namely, the so-called phlogistic or buffy crust), exhibiting a yellowish-white colour, and is of very firm consistence, tenacious, elastic, and transparent.

The blood coagulating quickly, offers no phlogistic crust, for the globules of the blood, on account of the more rapid coagulation of the plastic lymph, are not permitted to fall to the bottom; hence they become suspended by it, and do not change the place which they occupy. They tinge the clot in every part of a red colour; hence, on account of the equable distribution of the plastic lymph, the clot preserves an equable tenacity and firmness in every part.

The serum of the blood, extricated from the clot by the coagulation of the plastic lymph, appears of a greenish-white colour, and is a thin and transparent fluid. Blood, quickly coagulating, extricates but little of the serum, because a part of the serum remains shut up in the plastic lymph; the quicker, therefore, the coagulation of the blood, the smaller the quantity of serum which is extricated; and, *vice versâ*, the slower the coagulation, the more of the serum is extricated, (*i. e.* in blood free from any dyscrasy); so that the quantity of serum extricated is in direct relation with the quantity of phlogistic crust; for when there is a large phlogistic crust, then there is a large quantity of serum, and when there is no crust, then but little or no serum is extricated.

Blood stagnating in the heart and large vessels, life being extinct, separates in the same manner into its constituent parts, viz. into clot and serum, the clot, as in vessels out of the organism, adapting itself to the form of the vessels in which it remains. In the heart and large vessels, it forms oblong, globose, cylindrical, or conoid pieces, the superior part of which, of a white colour and gelatinous, constitutes the phlogistic crust, composed of plastic lymph; but the inferior part of the coagulated blood, of a deep black, is composed of the globules of the blood. These coagula are called polypi of the heart. The recent plastic lymph of these polypi, investigated by the microscope, is composed of soft, very thin, transparent fibrils, running in a straight and parallel direction, and enclosing among them very small molecules.

The plastic flocculent exudation of purulent puerperal peritonitis, is composed of plastic lymph and globules of pus.

The yellowish gelatinous plastic exudation produced from recent pericarditis, is composed of transparent, very thin fibrils, running parallel, or for the most joined into fasciculi, and also of the smallest molecules and globules, exceeding by twice or thrice the diameter of those of the blood.

The hard, plastic, greenish-yellow exudation from the mucous surface of the uterus, is also composed of soft, parallel fibrils, intermixed with numerous molecules, and the globules of pus are seen equally distributed among the fibrils.

The plastic yellowish-white exudation formed on the external surface of the heart for three or four days (the villous heart,) consists of soft, gelatinous fibrils, united into fasciculi, and running in a parallel direction, which enclose within themselves a few white transparent globules, exceeding by twice or three times the diameter of those of the blood, and filled by the smallest molecules.

The white, somewhat rough, plastic exudation of the villous heart, form-

ed from the *sixth* to the *eighth* days, is comp
running flexuously.

The globules of the blood are again endow
1*st*, With an envelope; and,
2*dly*, With a nucleus.

The envelope of the globules is a red sul
whence the blood takes its red colour, and is
the nucleus is not soluble in water; it is whi

The hard, white, plastic exudation of the
fourteenth to the *twenty-eighth* day, is endow
long and round areolæ.

Of the White Pellucid Fluid Serous Exud
of a bladder, formed by the application of a l
the microscope, consists of two constituent p
and a few white globules floating in it. The
scarcely exceed twice the diameter of those c
ed with a very fine, smooth envelope, which
Here and there, also, globules occur destitute
with naked, very small molecules.

The limpid serous fluid received from the
tains, besides the larger globules, others in n
the serum.

The limpid serous fluid extricated from re
abdominal typhus, contains the same globule

The limpid serous fluid filling the intersti
exudation of the villous heart, contains globu
the serum.

The white pellucid fluid of a serous cyst (
perfectly round, smooth globules, destitute o
larger than the globules of the blood.

The white pellucid serous fluid, with whic
œdema, contains white or yellowish globules

Of the Ulcers and Tumid Mesenteric Glan
Ileo Typhus—Ulcerous Ileitus—Gastro-ent
vous—Gastro-enteritis—Nervous Inflammato
Nervous Fever with Stupor.)—Abdominal ty
signated by so many names by the most ce
forms. In this place we shall speak of the
substance and texture of the inferior part of
glands adjacent to this, and of the changes in

In bodies examined on the *fifth* day of the
the membranes of the ileum, there is seldom

Those who die on the *tenth* day, besides a t
the ileum, show roughish, somewhat elevate
the extent of which exceeds one or two inche
the most celebrated anatomists. The mucou
cular infiltrations, *slightly* adheres to them,
part, and thrown into folds; but the mucous
long infiltrations, adheres *firmly* to them.

The muscular coat is intimately joined to a

The infiltrations thrust forward the muco
equal and smooth, whilst they are lenticular
patches, it is uneven and furnished with man
sions. The places which the oblong patches
of the glands of Peyer.

The texture of the infiltrated patches is fir
ish white, and a white, limpid, serous fluid is
investigated by the microscope, contains white

covering filled with the smallest molecules. The globules are round or oblong, and exceed the diameter of the blood globules once or twice.

The ileum of patients dying on the *fifteenth* day of the disease, offers infiltrated patches, covered here and there, near the valve of Bauhinus, with hard, brittle, greenish, or greyish-yellow, or brownish crusts. The thickness of the crusts increases to half a line and beyond; but the thickness of the infiltrations from half a line to almost two lines.

The crusts, investigated by the microscope, are composed of a substance irregularly granulated. They adhere at first firmly to the infiltrated patches, but somewhat later they adhere slightly, and are easily separated from them.

The slightly adherent crust, being removed, leaves an ulcerous infiltrated patch, whose margins are hard and elevated, but whose bottom is uneven, hard, slightly excavated, and covered with a very little fluid, of a greyish colour.

Under the microscope, round white globules are found in the fluid, of which some are composed of a smooth envelope, enclosing the smallest molecules, others of the smallest molecules only. Their diameter exceeds twice or four times that of the blood discs.

The infiltrated substance taken from the margins of the ulcer, offers, under the microscope, conoid or elongated corpuscles, mostly in the broader part, enclosing a central vesicle—their narrower part is prolonged into a thin fibril; intermixed among these, white, transparent, round globules appear, four or six times larger than those of the blood, and filled with the very smallest molecules.

The infiltrated substance taken from the bottom of the ulcer, contains the same microscopic forms.

The intestines, investigated on the *twentieth* day of the disease, exhibit few entire, infiltrated patches, but many ulcers, partly covered with crusts, partly clean excavations already freed from the crusts, the margins and the bottom being somewhat rough.

On the *twenty-fifth* day of the disease, the margins are somewhat elevated, the bottom of the ulcers appear but little rough, and here and there a crust is still found.

Those who die on the *thirtieth* day, exhibit ulcers with the bottom somewhat depressed; thin smooth margins; here and there fibres of muscular membrane appear in the fundus; in some the bottom is closed by the peritoneal membrane; in others it is perforated, and a free passage given to the contents of the alimentary tube into the peritoneal sac.

On the *fortieth* day of the disease, generally no more ulcers are to be detected; in their place, small smooth depressions of mucous membrane are found, provided with no intestinal villi and no follicles; the peritoneal serous membrane investing this small part, is remarked of a livid colour. The intermediate net-work, covering the depressed patch of mucous membrane, forms oblong and angular areolæ.

On the *sixtieth* day the depressions of mucous membrane are furnished with elongated cylindrical villi, distant from each other, and also with a few simple and shallow follicles.

The net-work of intermediate vessels forms angular, round, or oval areolæ.

Those mesenteric glands, which lie next the ulcers, most often swell; they grow red or livid, are rendered softer or more fluid; the degree and extension of the pathological changes in the glands being seldom found in indirect relation with the changes in the intestine.

The fluid extricated from the tumid, red, and livid glands, and examined by the microscope, is greyish-white; it contains, besides some globules of blood, a good many round, white globules, exceeding in extent from three to six times the blood-discs, with a smooth envelope full of the very small molecules. Globules are here found, furnished with one or more central vesicles.—*Microscopic Journal*, Numbers for Sept. and Oct. 1842.

Practical Remarks on the Employment of Indigo in Epilepsy, either alone, or combined with Castor and Assafœtida. By M. Podrecca.

In 1839 M. Podrecca published some cases of epilepsy which he stated he had cured with indigo combined with castor and assafœtida. To this it was urged in reply, that the cures were not owing to the indigo, but to the other two well-known antispasmodics. The three cases which he has now given to the public are for the purpose of doing away with the objection raised to his former paper; but it is questionable whether he has attained his end in view. According to the author, when the indigo is combined with the other two substances, a most remarkable amelioration is produced, and it would appear that, occasionally, when the disease has been very severe, the patients have lost their sight after the employment of the indigo alone, and that, although the fits have been lessened, they have not been altogether checked. If the indigo and castor were given alone no effect took place until they were combined with the indigo. From this it is evident that the latter substance is the active medicine, although at the same time it is necessary to administer it combined with the other two. The following is the formula employed by M. Podrecca:—

R.	Indigo	ʒi.
	Castor	gr. viii.
	Assafœtida	gr. xvi.

℥ et tere in pil. xviii. One to be taken every hour and a half.—*Memoriale della Medicina contemporanea*, as quoted in *Gazette Méd. de Paris*, 13th August 1842.

On the Treatment of Rheumatism by the Hydriodate of Potass. By M. Bouyer of Marennes.

In 1840, M. B. published, in the *Gaz. Méd. de Paris*, a case of chronic rheumatism which he had successfully treated by the hydriodate of potass, and in the present number several others are given, both of a chronic and acute nature, in which the same remedy succeeded after many others had failed. It was always combined with the syrup of poppies, and exhibited daily in the dose of 25 centigrammes at first, gradually increased in some cases to 2 grammes or 30 grains. As the cases possess nothing very interesting in themselves, we think it unnecessary to give them. The following is a summary of his paper and opinions:—

1*st*, The hydriodate of potass is a remedy of confirmed utility in the treatment of cases of chronic periostitis, chronic articular, and sometimes acute rheumatism, more especially if in this latter it has been preceded by antiphlogistics, which have only proved of partial or no benefit.

2*d*, That it is equally useful in cases uncomplicated as in those complicated with syphilis, and that it succeeds when the ordinary syphilitic remedies have failed.

3*d*, That it may be given along with opium in the dose of from 25 to 40 centigrammes a-day, and gradually increased until 4 or 6 grammes are taken, without any fear of exciting absorption either of the mammæ or testicles.

4*th*, The only morbid phenomenon observed to this time, from doses of the above strength, and this requires still to be confirmed, is an inflamed state of the mucous membrane of the nose and palate.

5*th*, Lastly, as it is given in the same diseases for which cod-liver oil has been recommended, it ought to be used in preference to it, as it is less disgusting to the patients, and is, perhaps, more active and more sure.—Abridged from *Gazette Méd. de Paris*, 30th July 1842.

On some Cases of Malignant Pustule, caused by Eating the Meat of an Ox that had died of that disease. By M. Turchetti.

In the year 1841, while small-pox was raging at Fucecchio, and throughout Tuscany, an epidemic of malignant pustule also attacked the cattle in the different provinces of the duchy. Notices were issued preventing the sale of the meat of those animals which were affected with the disease, yet notwithstanding, a butcher, from a neighbouring district, contrived to introduce to Fucecchio a diseased carcase, which he sold at such a low price that it was eaten by a great many. Its appearance was exactly similar to that of healthy meat. The greater number of those who had partaken were seized with the following symptoms, generally within 24 hours, but in some cases not till two or three days after: intense fever, delirium, prostration of strength, want of sleep, colic, diarrhœa, vomiting, distension of abdomen, lividity of the face, and a general tendency to serous effusion. Over the face, neck, arms, and lips, painful tubercles appeared, surrounded by a small red circle. In some there were small whitish pustules; the eruption, which was either tubercular or pustular, gradually increased in size, until it assumed the character of the malignant pustule. In about a week, an eschar which, in the greater number of cases, had formed, came away, leaving a healthy sore which soon cicatrized. In the others, the disease was more severe, and, instead of being confined to a few tubercles or pustules, with slight surrounding inflammation, this latter showed itself under the form of erysipelas. In these the eschar did not separate for two weeks, and when it did the ulcer had a foul appearance; it was accompanied throughout by nervous and gastric derangement, which continued even after the sores had healed. Two deaths are reported to have taken place, but in both the individuals were old. None of those were affected who were employed in killing, touching, and preparing the meat, if they did not partake of it, which is rather remarkable in the history of this disease. The treatment employed was antiphlogistic, emetic, and cathartic.—*Annali Universali di Medicina.* Abridged from *Gazette Méd. de Paris*, 6th August 1842.

Account of a Case of Intestinal Calculus Passed Spontaneously. By M. Jahn.

A Jew, 50 years of age, subject to obstinate constipation, was seized with violent fever, which left great debility of the digestive organs. While suffering from this latter he passed by the anus a stone about the size of a pigeon's egg; it was $\frac{7}{8}$ths of an inch long and $\frac{6}{8}$ths broad, and weighed a drachm and a half. Its surface was whitish yellow, and it was easily pulverizable. Upon cutting it, a nucleus of a light brown was seen, of a line and a half in diameter, outside of which was a layer of whitish yellow; this again was surrounded by a covering of a greyish brown. The calculus had an odour of decomposed urine. After the patient passed it his skin became yellow.—*Correspondenz Blatt Bayerischer Aerzte*, No. 9; *L'Examinateur Méd*, 1st September 1842.

Remarkable Case of Irritability of the Stomach, Produced by Eating Bread or Pastry. By M. David.

The subject of this case was a young soldier, 21 years of age, who, after having served a year, was dismissed the service as being unfit for a military life. Shortly after his entrance into the army, he came under the care of the surgeon as a patient affected with vomiting. He stated that, if he did not eat

bread or pastry, he was perfectly well, but that as soon as he swallowed any food which contained wheat, he was seized with vomiting, and that he only recovered after he had lost the contents of his stomach. He was sent to different military hospitals, and underwent various examinations, both of a medical and non-medical nature, from all of which it appeared that he was not feigning; that vomiting was produced if he took soup, or any other kind of food, to which wheat flour was surreptitiously added; and that when living with his parents, his diet consisted of potatoes and milk; that he was in the habit of running away if they wished to give him any bread, and would not return until they had promised that he should not have any.—Abridged from *Gazette Méd. de Paris*, 30th July 1842.

[Several general observations are made by the author on irritability of the stomach, which, however, we think it unnecessary to quote.]

Case of Dissecting Aneurism. By M. Tessier.

A man, aged 60, was brought to the hospital in a state of insensibility. His face was pale, and his pulse could hardly be felt. He had been treated at his own house for three days, by a physician, for apoplexy. He died shortly after his admission, before any treatment was had recourse to.

Post-mortem examination.—The pericardium was full of coagulated blood, but the opening from which it escaped could not be discovered. In the three anterior fourths of the ascending aorta, the external coat was separated from the middle, while, in the posterior fourth of the vessel, these membranes still remained in contact. The same disposition was found in the arch of the left side of the ascending and abdominal aorta, and extended inferiorly into the iliac, femoral, and popliteal arteries, while, superiorly, the innominata and the two carotids were similarly affected round the whole calibre of the vessels. In all these situations the arteries were composed of two distinct canals, the one, between the outer and middle coat, full of blood, and the other, the natural cavity, empty. The intercostals, and every other branch which rises from the aorta, the anterior aspect of the left auricle, and the posterior part of the right, were in a like condition. About a line from the origin of the innominata the two internal coats were divided, and their superior border formed a spur-like projection in the interior of the artery. Numerous points of ossification were scattered over the ascending aorta.

At the end of this interesting case, M. Tessier gives a *resumé* of all aneurisms of a similar kind which have been published. They amount to nine in all. Two were seen by Morgagni, one by Laennec, one by Mr Pennock, one by Mr Goddard, and four others are to be found in the different English periodicals. It is remarkable that, in all the cases, the disease has been of short standing,—from seven hours to 30 days: in one, however, eight years had elapsed from the commencement; in M. T.'s, there is every probability for supposing that it also had been of short duration. A proof that, in all the cases, the disease had never existed long before its fatal termination, is the blood being always found fluid, or as a black coagulum, and the want of marks of inflammatory action. The conclusions to which M. Tessier arrives, are, that if aneurisms are generally found with a sac, it is owing to inflammation having taken place between the external and middle coats, at the time that the inner membrane gives way, thus preventing the effusion of blood between them; whereas, when a dissecting aneurism is found, the inner coat has burst, before lymph has been thrown out between the external and middle tunics; or, if it has been thrown out, the rupture has taken place beyond the limits of the effused lymph, and consequently the blood would escape between the outer and middle coats. It is in this way that M. Tessier accounts for the sacculated being much more frequent than the dissect-

ing aneurisms. The editor of the Journal, however, from which we make this extract, asks, if inflammatory action really exists at the point where the inner coat gives way. He says that it does not; that when it does, it is the exception; and that although M. Tessier's theory appears probable, yet it does not coincide with the facts. If, on the other hand, it is true that inflammatory action does not always exist at the ruptured point, it follows, that dissecting aneurisms should be much more common than they are, and that if the effusion of lymph is the exception and not the rule, they should be the ordinary kind of aneurism seen, and the sacculated the exception. Besides, if the inflammation of the coats did exist, and extended to the cellular membrane at the time of rupture, this latter should become inextensible and friable, as all inflamed tissues are, and consequently could not readily be converted into a sac. He does not wish, he says, to carry on the discussion farther, and to nullify the explication given by M. Tessier; he is anxious only to show that it can be attacked both in its principle and its conclusions.—*Giornale delle Scienze Mediche;* abstracted from *Gazette Méd. de Paris*, 13th Aug. 1842.

[We would merely suggest that, in his remarks, the editor of the *Gazette* seems to forget that the generality of aneurisms become false, or have their outer coat ruptured, from the inability of this latter to bear any great pressure; this circumstance may be in favour of M. Tessier's views, as showing, that this membrane is not in its healthy state, but has become brittle from the inflammatory action that has been existing in its neighbourhood.]

Sympathetic Asthma from Lumbrici. By J. D. Jeffrey, Esq., Surgeon, Sidmouth.

I have met with *one* case to which I can only apply the above title.—Gooding's child, a girl aged 2 years, was brought to me on the 13th January 1840. She appeared quite asthmatical; the shoulders were raised to the ears, and the act of breathing was difficult, accompanied with a loud wheezing; she had not suffered from fits. It was affirmed by her mother, that the child had always been affected with asthma, which she believed had been inherited from her father, who suffered from it. The bowels being much confined, I ordered some aperient powders containing calomel, one to be taken daily. In the course of four days, nine large lumbrici were ejected by the mouth, and three from the bowels. The child became lively and quite well, as soon as the worms were expelled.

I have met with several cases in which different diseases were simulated through the presence of worms in the stomach, all bad symptoms having disappeared on their ejection by vomiting. I never knew so many brought up at one time as by the child above mentioned.—*Prov. Medical Journal*, June 18, 1842.

SURGERY.

Case of Carcinomatous Stricture of the Rectum, in which the Descending Colon was Opened. By Mr Jukes.

Sarah Pass, aged 30, having an emaciated frame, and anxious expression of countenance, was admitted into the Birmingham General Hospital on 6th May 1842, under the care of Dr Blakiston, with all the symptoms of intestinal obstruction. She states that she has had four children, that her bowels

were always regular, until eight months ago, when she began to suffer from obstinate constipation, succeeded by vomiting. These symptoms continued for a month, (during a fortnight of which time she had no evacuation,) and then subsided. Since then, her bowels have not been opened oftener than once in three or four days, and about a month ago, she again suffered from an acute attack. For the last three weeks, she has had no alvine motion, with the exception of a scanty one five days ago, described as slimy. She has had great desire to empty the bowels. For the last week, has suffered much from distension of the abdomen with vomiting. She has no headache; her pulse is soft and tranquil; her breathing quick; her skin cool, and her tongue whitish and moist. The fluid vomited is tinged with bile, and has no stercoraceous smell. Her abdomen is very much distended; percussion gives a resonant sound throughout, and no tumour can be felt. On examining the vagina and rectum, a firm, dense tumour is felt, some three inches from the anus, on the left side of the recto-vaginal septum, extending upwards towards the left sacro-iliac symphysis. This growth seems to be connected with the uterus, and to have rendered it more oblique than natural, but it does not constrict the canal, as far as can be ascertained, to a sufficient degree to produce the symptoms of obstruction under which she labours. A tube was passed up the bowel for ten inches, without encountering any obstacle, but upon throwing up an enema, not more than six ounces were retained, the remainder flowing away as fast as it was introduced by the syringe. The patient not being at all relieved by any medical treatment, Mr Jukes, as surgeon for the week to the hospital, was requested to see her, who, after consultation with his colleagues, determined to open the descending colon, as recommended by Calisen, and more lately practised by Amussat. When the woman was laid on her belly, the colon was easily discernible by its great projection, and by the resonance on percussion. On the 8th of May, a transverse incision was made over it, extending from a point about two inches distant from the spine, directly outwards. It was four inches long, and an inch above the end of the ilium. Upon dividing the latissimus dorsi and quadratus lumborum, a mass of fat started out, beneath which the bowel was felt. The finger could not be passed round the bowel,—a proof that the abdominal cavity was not opened. After the intestine was exposed, and two sutures passed through it, to attach it to the external wound, a vertical incision, an inch long, was made into it, when a large quantity of fetid gas, with about three pints of semi-fluid feces, escaped. The distension of the belly subsided, but slight pressure on it made the feculent matter flow from the opening in the loins.

9th. Had a tolerable night. Has had no vomiting nor nausea, but asks for brandy to relieve her lowness. Has had several copious evacuations from the loin, containing liquid and hard feces. There is slight tenderness on pressure in the left iliac region.

10th. The evacuations have been more numerous and thinner. Some irritability of bladder. Pulse in the evening 100, sharp and small.

11th. Is said to be going on favourably. In the evening, however, had a rigor. Says she passed flatus by the natural passage.

13th. Has had frequent desire to pass the excretion by the anus. Complains of lowness and sinking. Has some catching in the breath, and pain in side. The colon tube was introduced eight inches into the rectum, and an enema administered.

16th. She has improved in appearance since the 13th; her appetite has been good, and her tongue clean; her pulse has varied from 90 to 96. Was seized last night with cough and expectoration. In the evening, as she had had no evacuation, the colon tube was passed down from the loin from ten to twelve inches, and eight ounces of milk and water injected, which returned along the sides of the tube. Next morning she had a rigor. She then began to get gradually worse, and sank on the evening of the 24th.

Post-mortem examination.—The lungs were quite healthy, but there were some old adhesions between the pleuræ. The peritoneum was inflamed, with recent patches of lymph in several places. The cœcum was on the left side of the spine, and apparently pushed into that situation by the small intestines, which were distended, and to its right side. The descending colon, at the point opened, was adhering to the muscles of the loin, and required dissection to separate it. The rectum, at about ten inches from the anus, was contracted in its calibre by a carcinomatous thickening of its coats, which extended for about four inches. The textures in the neighbourhood of the bowel were intimately connected with the cancerous structure. The stricture of the bowel allowed the middle finger to be passed through it. The mucous membrane was ulcerated, and in several places dark brown spots of softening had commenced, forming small cavities, from one of which a sloughy sinus extended deeply into the interior of the recto-vaginal tumour.

Remarks.—The displacement of the cœcum, described in the inspection, may perhaps be regarded as an argument in favour of Amussat's opinion, that the right colon is more subject to variation of position than the left; but it must be remembered that the seat of this portion of bowel was marked before the operation by unequivocal signs, and I have no doubt it changed its situation immediately after, and as a result of the operation. It may be thus explained. The entire length of the large intestine would be emptied rapidly of its contents, after the aperture was made, and would consequently collapse; whilst the small intestines, unable to force their contents so quickly through the ileo-cœcal valve, would naturally come forward in front of the empty cœcum, and being yet full, would stretch themselves to the right side, overlap it, and push it inwards towards the median line, where, not being afterwards subjected to inordinate distension, it would remain. I must at the same time state my belief, that such a transposition of cœcum can take place only when it is nearly empty. After mentioning Mr Clement's successful case, and the connections of the colon with the loins, Mr Jukes goes on to say, the merits attaching to M. Amussat's modifications of this surgical proceeding, have now been tested by eight cases; and from the success which has attended them, it may be fairly placed amongst the list of standard and established operations. In order to describe the nature of the cases in which the surgeon may adopt it with utility, we must regard it in two points of view,—as a curative, and as a palliative proceeding. As a curative measure, if so it may be termed, when applied to remedy malformations, its performance may be demanded in those cases of imperforate anus, in which, from the absence of signs usually denoting proximity of the lower end of the rectum to the surface, we are led to infer that it forms a cul de-sac, high up in the pelvis, or that its sides are adherent; an aperture thus made into the descending colon, will afford a more easy, more speedy, and less dangerous mode of remedying the defective development, than the deep, difficult, and consequently tardy dissection of the perineum. It at the same time will be so low down in the intestinal tube, as not to interfere with the perfect nutrition of the body.

As a merely palliative mode of treatment, this operation admits of a more extended application. With this view, it may be performed in cases of chronic disease in the coats of the large intestine, causing stricture, in some instances in which foreign bodies are impacted in the canal, and attended with urgent symptoms of obstruction, as well as in those cases wherein a barrier is created to the evacuation of the bowels, through compression made upon them by tumours, or enlargement of other organs in the same cavity.

By some practitioners it may be considered that we are scarcely justified in recommending an operation in cases of malignant disease, for the mere relief of the urgent symptoms; but when we reflect upon the fatal nature of these symptoms,—when we remember that an alteration is thus made in the

course of the excrementitious matters, by which a source of constant
tion is removed from the morbid growth, and that in consequence of t
increase may be suspended and retarded, and life thus prolonged for
definite period, it can scarcely be necessary to adduce any arguments
vour of its performance.—Abridged from *Mr Jukes' Case of Carcinom
Stricture of the Rectum*, 4to.; with plates. London, 1842.

[Mr Jukes has preferred laying this interesting case before the profe
in the form of a separate publication, to inserting it in one of the m
periodicals. The plates attached to it are well executed, and show c
the different appearances found on dissection. We agree with him en
in the utility of the operation in a great many cases that are at pres
lowed to die without any surgical interference being had recourse to. In
of imperforate anus, if the termination of the bowel is not found with
inch and a half of the surface, it would certainly, in our opinion, be mo
visable to open the descending colon than to search for the rectum in th
vis. There is one part, however, of Mr Jukes' treatment of the case
which we disagree. On the fifth day after the operation, the colon tub
introduced eight inches into the rectum, and an enema administered,
brought away soft feces; it was afterwards introduced into the openi
the loin, and carried down on one occasion to the extent of fourteen in
It could not be felt by examination either in the vagina or rectum; in
it must have been pushed through the bowel, as was proved on dissecti
the sloughing sinus mentioned above. He himself says that his patie
well till the eighth day, and on that evening the tube was first inserted
the loin; it had been already used by the rectum on the fifth. Althou
have no doubt that slight peritoneal inflammation may have been ex
previously, yet it was unquestionably increased, and kept up by the
duction of the tube, until at last a false passage was made, and slou
produced. This case shows well the danger of introducing a tube to an
tent into the bowel, for, although the tube may appear to enter, we m
merely pushing the intestines before us, and in this way deceiving ours
and again, if it is entered from the anus, it is a well-known fact that it
ficult, and in many cases almost impossible, to avoid coming in contact
the promontory of the sacrum, thus giving to the surgeon the idea of the
tence of a stricture when none exists.]

Cancer of the Tongue Operated on Unsuccessfully, after the Me of M. Regnoli of Pisa. By M. Roux.

This method consists in removing the diseased mass from the tongu
an incision made from the chin down to the os hyoides, and along the
of the jaw, from one masseter muscle to the other; the different attachm
of the tongue are then divided, and the organ forcibly protruded. This
ration has only been performed twice, once by M. Regnoli, and once b
Roux. In the first case it was successful, in the latter the patient died.
advantages to be derived by this mode, according to M. Regnoli, are
That the disease is got at more readily than when the operation is perfo
by the mouth; 2*d*, That the hemorrhage is more easily commanded;
3*d*, That there is not the same dread of instant suffocation from the
escaping into the throat. The following is a short abstract of M. R
case:—The patient, Augustin Pignor, a cooper, 63 years of age, came
his care on the 11th of February 1841. None of his relations had eve
fered from cancer; he himself had never had syphilis, but he had b
confirmed smoker from the age of 12. The disease commenced two m
ago on the left side of the tongue, and since then has gone on gradual
creasing in size. He suffers pain of a lancinating character, occasi

increased by speaking or swallowing. The tumour is of a considerable size, of a red colour, and ulcerated on the surface corresponding to the teeth. It is hard, painful on pressure, and pushes the tongue towards the right side. It occupies two-thirds of this organ, both from before backwards and from side to side. Deglutition is not painful, and the tongue can still be moved with a certain degree of facility. The operation, which differed slightly from M. Regnoli's, was performed on the 19th of February. The patient being placed in a chair, and his head supported on the breast of an assistant, a semicircular incision was made from the base of the lower jaw on the left side to that on the right, passing near the os hyoides; the flap was then dissected up, and held in that situation. A bistoury was next pushed into the mouth, and the attachments of the different muscles divided, first on the one side, then on the other; the tongue was now seized by a hook and brought out. The diseased portion, being completely brought into view, was easily removed. The arteries were tied as they were divided; the tongue was replaced in the mouth, and the edges of the wound brought together by the interrupted suture. On examining the tumour, it was found to be about the size of a hen's egg, and to have been completely removed. On cutting into it, its structure was hard, of a pale yellow, and traversed by white striæ. The patient continued doing well until next morning, when, at the time of the visit, he was suddenly seized with intense dyspnœa, and the respiratory murmur could scarcely be heard for mucous rattle. M. Roux, concluding that there was some obstruction to the free entrance of the air to the lungs either in the wind-pipe or bronchia, determined to give him a chance by performing the operation of tracheotomy, but during its performance he fainted. When the circulation was restored, the trachea was opened, and a small clot of dark-coloured blood escaped. The patient, however, became worse, and gradually sank. At the *post-mortem examination*, no cause for the sudden death could be discovered; the wound in the neck had been made in such a way as not to interfere with either of the facial arteries. Without agreeing entirely with M. Velpeau, we give his opinion of M. Regnoli's operation, as taken from his *Med. Op.*, t. iii. p. 556. He says, "I cannot conceive that M. Regnoli had any right for a tumour of the tongue to incise completely the supra-hyoidean region, and to withdraw the tongue by it, even supposing the young girl (his patient) to have been cured."—Abridged from *Gaz. Méd. de Paris*, 23d July 1842.

WOUND OF THE RIGHT EXTERNAL CAROTID ARTERY; UNSUCCESSFUL ATTEMPT TO TIE THE COMMON CAROTID ON THE 5TH DAY AFTER THE ACCIDENT; LIGATURE OF THE CAROTID ARTERY ON THE 13TH DAY; HEMIPLEGIA OF THE LEFT SIDE; PARALYSIS OF THE MUSCLES AND NERVES OF SENSATION OF THE RIGHT SIDE OF FACE; DEATH ON THE 23D DAY AFTER THE WOUND, AND 10TH AFTER THE OPERATION. BY PROFESSOR SEDILLOT.

Charles Muller, 19 years of age, was stabbed on the night of the 10th of April 1842, with a shoemaker's knife, below the right ear and behind the angle of the inferior maxilla. A large jet of arterial blood immediately gushed from the wound, which he partially stopped with his handkerchief. He was obliged to walk half a league before he reached his home, when he was immediately seen by Dr François, who found him pale and faint from loss of blood. The hemorrhage was arrested for the moment by compression; it occurred however from time to time, and to such an extent on the fifth day, that Dr F., without any assistant but a peasant, determined to tie the common carotid. The operation, from being done at night, was necessarily tedious; after some difficulty, a ligature was applied round what was supposed to be the artery, and compression was continued to the wound. There was now no hemorrhage for three days; it then returned as severe as

ever. M. Sédillot having been called to the case, found that the art the previous operation had not been tied. He then proceeded to th ligature round it before it passes under the omo-hyoid muscle; but con able difficulty was experienced in doing so, owing to the cellular tissue neighbourhood being infiltrated with blood and pus. Upon examinir wound, the edges were found gangrenous from the pressure, and at th tom of it was seen a small pulsating aneurism, which disappeared aft artery was tied. Three hours after the operation, Dr François disco that the left side was hemiplegic, and that the right side of the face w ralytic. The exact time at which the palsy made its appearance coul be ascertained, but as it was not discovered by any present at the oper it may be concluded that it did not take place immediately after the lig of the vessel. The intellects of the patient became weaker, and he sca answered the questions addressed to him. On the 28th, he had severe r which were supposed to be owing to a fit of ague, and for which quinin given. On the 30th he had other two rigors. He expired on the May. On the day before his death, Dr François and several other i duals saw him carry his left hand to his head, a proof that the paraly the superior extremity had ceased; the leg, however, never recovered its p

Post-mortem examination.—When an injection was thrown into th carotid artery, it was seen to escape by the wound in the parotid regior none flowed from that in the neck. The original wound was then diss when the external carotid artery was found to have been opened ab millimetres above the origin of the facial artery, in a vertical directi the extent of from 6 to 10 millimetres, varying according as the artery or was not distended. A fibrinous clot, which had been washed out adhering to the inferior extremity, while the superior opening was quite with a similar coagulum. Upon laying open the common carotid, the above the ligature was filled with injection from the facial and superior roid arteries, while the inferior portion received injection from the sources. The ligature had been placed about 36 millimetres from the of the carotid.—Abridged from *Gaz. Méd. de Paris*, 3d Sept. 1842.

Treatment of Toothache by Luxation. By Dr Svitzer.

Dr Svitzer states, that he has always found obstinate toothache effec cured by luxating the tooth, and replacing it in the alveolus. The toot gets perfectly firm. If caries be present, stuffing is requisite to prevei ther decay.—*Bibliothek for Laeger*, (*Danish Medical Journal, edited Otto*,) 1841.

MIDWIFERY.

Extraordinary Case of Twins, in which one (a dead) Child was ri ed in the Womb for forty-nine weeks, the other having been alive at the expiration of nine months. By William Jameson, Consulting Surgeon to the Coombe Lying-in Hospital, &c.

On the evening of the 3d April last, I was called to Fitzwilliam Pla see Mrs R., a lady about thirty years of age, the mother of four living dren, in consequence of severe pain experienced through the abdomen, recurred at uncertain intervals, lasting generally about five minutes time. These pains commenced in the morning after breakfast, but in quence of their becoming more severe, and dreading inflammation, sh

for me. When I arrived she was in bed, her pulse a little accelerated, tongue clean, no tenderness discoverable on pressure in any part of the abdomen; which felt full, but being seized during the examination with a pain, I then distinctly discovered a firm, hard tumour, that reached as high as the umbilicus, but became softer on the subsidence of the pain, and which appeared to me to be a gravid uterus. On applying the stethoscope over the tumour, after some difficulty I thought I heard a placental murmur in the right iliac fossa, but no fœtal heart anywhere, and suggested the possibility of her being with child, and then in labour. This, however, she considered to be impossible, as she had been confined so recently (seven weeks) of a child she was then nursing. A vaginal examination was refused; I found, however, on inquiry, that she had had a slight red discharge from the vagina during the latter part of the day, which she considered menstrual. As I was convinced that the tumour was the uterus, and that it was acting to get rid of something or other, I ordered an oil draught, and quitted the apartment in order to explain to her husband my views of the case, viz. that there was some foreign body in the womb, which in all probability would soon be expelled. While we were thus conversing on the subject, I was hurriedly summoned to my patient, who told me that there was something coming from her. On making the examination during the pain, I found the head of a small child presenting with the membranes complete, and on the recurrence of another pain, the child, membranes, and placenta, were expelled altogether. I immediately opened the bag, containing very little liquor amnii, and found in it a dead male child, at about the sixth month of gestation, shrivelled and dark, but not at all putrid or decomposed, between eight and nine inches long. The cord was small, easily giving way under the fingers; but the placenta appeared to be fully as large as one belonging to a full-grown fœtus, and healthy. Indeed, I have often met a smaller one at the full period. The uterus now contracted well. I placed a binder round the abdomen, administered an opiate, and never saw a more astonished female.

The account I received was as follows. It appeared that she had had four previous confinements without any untoward circumstances, each labour being generally complete in a few hours; that the youngest of them was a boy then only seven weeks old, having been born on the 13th February last, which she was nursing; that she had been attended by a midwife at her residence in the county of Wicklow (her usual medical attendant being out of the way when sent for); that on that occasion her labour went on much the same as usual, having been completed in four hours; that the after-birth was thrown off about ten minutes after the birth of the child, without any subsequent hemorrhage; and that she recovered and was able to go about her domestic arrangements as soon as on former occasions; but she remarked that her size had not much decreased, which she imputed to bad swathing of the abdomen; that her general health was good; had as much milk as usual, and the only thing that annoyed her was her size, which she considered a natural consequence to her situation, as she always got fat while nursing; that the last time she menstruated, was in the latter end of the month of April 1841, and as she had been confined on the 13th February last, forty-two weeks must consequently have elapsed between the last period of menstruation and the birth of the child.

The above case I consider as one of great interest, whether viewed, in the first place, as regards the size of the child, it being as large as a child at the sixth month; the circumstance of its having been carried forty-nine weeks (within three weeks of twelve months) after the last act of menstruation, and remaining for such a length of time after its growth was arrested in utero without becoming decomposed; the labour pains ceasing after the birth of the first, and no inconvenience arising from, or suspicion of any thing remaining in the uterus after that accouchement. All these points, I say, are

of great interest. Secondly, to view it as a c
of common twins, in which the first was ex
stances at the full period; then all labour-pa
rant woman being in attendance, who did not
remained behind or not, from the feel of the
only exist, but was carried for seven weeks af
of its existence. I am fully aware that man
(and a similar one occurred to myself) of
twins, where one ovum was expelled, and th
has gone on progressively increasing in size, a
might be, brought forth a living child at th
again, of twin cases, in which one child has g
been born healthy, and full grown, while its
blighted at a very early period (a beautiful p
we have preserved in the Coombe Hospital M
the same labour, giving rise to the idea of sup
ing conceived again while she was pregnant,
child not being putrid, some erroneously ima
be carried for any great length of time wit
But I am not aware of any instance in whi
twins (evidently the case here), where, at th
went on healthily, expelling one child alive,
ed, and held in the womb for seven weeks af
placenta is also a matter deserving of attenti
hage after the birth of the living child, inasm
expelled contents prevented uterine contracti
for that purpose. The only answer I should
remaining in the womb, and of a sufficient si
the surface to which the other placenta was a
saved the patient.—*Dublin Journ. of Med. S*

FORENSIC MEI

Case of Poisoning by Arsenic. By Joh Chemical Examination of the Contents By Alfred S. Taylor.

C. B., aged 35, a powerful and muscular
whilst under the influence of some temporary
lowed a considerable quantity (more than a
part in powder, and part in small broken fra
evening he was visited by a surgeon, who a
an emetic, which produced vomiting; but
ejected matter. The stomach-pump was t
some small portions of arsenious acid came
During the intervals of using the pump, soo
subsequently he took a small quantity of th
was brought to the hospital about a quarter
ing, in a state of collapse and approaching ir
great pain on pressure over the region of
again employed, without removing any of
ascertained; and although he now became m
debility was increasing. He was then put to

laginous fluids freely. He did not rally from the collapse into which he had fallen; and sank progressively until his death, which took place about a quarter to 3 o'clock the same morning, ten hours after taking the poison.

Sectio Cadaveris, at half-past 1 o'clock the same day, that is, twenty hours after the administration of the poison, and ten hours after death.—The countenance was calm and placid; the gums were noticed to be unusually pale, almost white; and the lips did not present any lividity: there was some red discoloration from gravitation at the posterior parts of the body; and the cadaveric muscular rigidity was well marked. *Thorax.*—About three drachms of healthy clear fluid were found in the pericardium: there was no evidence of any recent pericarditis. The heart was not much distended with blood. With the intention of obtaining some blood for examination, an opening was made into the lower part of the right ventricle, and the contents collected in a clean glass. By pressure on the abdomen, and the parts surrounding the heart, about eight ounces of fluid blood were obtained, for the purpose of having it analyzed. The blood was of a dark rich damson colour, not presenting the black appearance of ordinary venous blood. The endocardium and the lining membrane of the large vessels were free from red discoloration, and the structures themselves were healthy. The lining membrane of the trachea and larger bronchi was much congested with dark blood; and some of the smaller tubes contained a tenacious muco-purulent fluid: the pulmonary tissue was rather congested with fluid blood. No effusion into the left pleural cavity, on which side the pleura was free from adhesions; there were old general pleuritic adhesions on the right side. *Abdomen.*—No effusion into the peritoneum. The great omentum extended about half way down the abdomen, overlying the small intestines: there was no evidence of any general peritonitis. A peculiar smell was exhaled from the abdominal contents: to myself, it was like the odour of fish not quite fresh; to others, it had the smell of garlic. The exterior of the stomach presented no evidence of inflammation; but some congested veins in the parietes were sufficiently obvious, and could be traced by their dark appearance. The external part of the small intestines, especially the ileum, had a pinkish colour, apparently from injection: the intestine was flaccid, and had a peculiar translucent appearance. The stomach, which was firm and capacious, contained about a pint of dark-brown mucous fluid; and here and there were seen very small granules of arsenic mixed with it. After allowing this fluid, (some of which was almost gelatinous,) to fall from the stomach into a basin, a large quantity of semi-transparent glairy adhesive mucus was yet covering the internal surface of the stomach, particularly along the smaller curvature, towards the pylorus. At some parts, this fluid seemed free from arsenious acid; at other parts it embraced and included numerous minute portions of the poison, looking as if mortar had been mixed with it: this was especially to be observed at two parts, where the retaining mucus was nearly an inch in thickness: both these parts contained numerous fragments of the poison, which were thus comparatively fixed and isolated: so that not any of the acid could be said to be positively in contact with the mucous membrane. The largest accumulation was situated about an inch and a half from the pylorus, where the hard portions of arsenious acid had been felt before the stomach was opened: the other was nearer the œsophagus. The mucous membrane presented the most beautiful rich red colour (from inflammation) I ever saw: this was most conspicuous at the pyloric extremity, near the greater accumulation of the poison. The whole surface of the mucous membrane, with the exception of a small portion near the œsophagus, was corrugated and raised into ridges, and the summits of these were most minutely injected with blood; whilst the intermediate sulci, which, by the corrugation, had been partially defended from the irritant, were comparatively free from colour. The ridges had a zig-zag, curved, or wavy arrangement, with a general direction from the œsophagus to the pylo-

rus. The mucous membrane was firm; and the whole parietes of the stomach, particularly the right half, appeared contracted and fleshy. There was no indication of inflammation in the œsophagus, the internal membrane of which was nearly as pale as usual, forming a remarkable contrast with the vascular appearance of the adjacent part of the stomach. The artist detained the stomach for two or three days, for the purpose of completing a coloured drawing; yet there was no destruction of mucous membrane opposite the accumulations of the arsenic. The exterior of the upper third of the duodenum was coloured by transudation of bile: the interior was a good deal inflamed; and its mucus contained specks of arsenic. The whole length of the intestines contained an abundance of flaky mucus, but less and less from above downwards. The liver was healthy, and contained fluid blood. The spleen was small, but presented nothing else abnormal. Kidneys healthy. The urinary bladder was firmly contracted, and did not contain a drop of urine: its internal surface presented numerous small diffused red patches, from inflammation, some of which resembled small red ecchymoses: there was also marked diffused vascular congestion surrounding the terminations of the ureters. The abdominal aorta and iliacs were not stained by the fluid blood they contained.

Chemical Examination. *Contents of the Stomach.*—The contents of the stomach amounted to about a pint and a half of thick mucous liquid, tinged with blood and bile. Large flakes of mucus, intermixed with lumps of coarsely-powdered arsenic, subsided to the bottom of the vessel, on allowing it to stand. The quantity of arsenious acid present was about two drachms. As it was in a state of coarse powder, the greater part of it was easily separated by levigation: the poison, however, was detected without having recourse to this process. A small lump, weighing about two grains, was lightly washed in distilled water, and dried on bibulous paper: it was then reduced to powder; and a small portion of this powder, heated in a tube with soda flux, gave immediate indications of arsenic, several well-defined rings of that metal having been obtained.

As there was enough arsenic in the stomach to saturate fully the liquid in which it was found, it next became an object to ascertain whether or not this liquid was strongly impregnated with the poison. A slip of filtering paper was dipped into it; and this paper, thus saturated with the liquid, was exposed in a tube to a current of sulphuretted hydrogen gas. There was no change indicative of the presence of arsenic. About one ounce and a half of the liquid, previously filtered and acidulated with acetic acid, was now treated with a strong current of the gas; but although this was passed in for a quarter of an hour, there was scarcely any perceptible change, and no precipitate was formed. The froth produced on the surface of the liquid by the escape of the gas had a slight yellowish tinge, somewhat resembling that caused by arsenic under these circumstances; but as the liquid was itself of a yellow colour, the effect was not sufficient to justify an inference of the poison being present. Thus, then, we derive the conclusion, that although there was a large quantity of arsenic in the stomach, and the man had undoubtedly died from the effects of the poison, there was no perceptible portion dissolved in the liquid found in the organ. So far this result conveys a caution to those engaged in performing analyses in suspected cases, that they must chiefly rely for the detection of arsenic on an examination of the solid contents, or of the parietes of the stomach. In the last Number of these Reports (*Guy's H.*) will be found a parallel case, which came to trial. No poison could be detected in the liquid of the stomach, nor even, in this case, in the solid lumps of mucus floating in it: it was only in the substance of the inflamed and irritated parts of the organ that arsenic was satisfactorily found to be present. The explanation of this fact is well known to be, that arsenic is but little soluble in cold liquids, under any circumstances; and that it is still less soluble in liquids containing organic matter, than in those which

are free from it. As this was decidedly a case of acute arsenical poisoning—the man having died within ten hours from the time of taking the poison—it was considered to be a fair opportunity to test the correctness of the statements of Orfila and others, as to the general diffusion of arsenic through the body. For this purpose, a small quantity of blood taken from the right cavities of the heart, the spleen, and a portion of the large lobe of the liver, were handed to me by Mr Hilton.

The Blood.—As Orfila was the first toxicologist who, according to published reports, had succeeded in detecting arsenic in the blood and organs of the body, it was resolved to pursue strictly, with regard to this liquid, the improved process recommended by him. Until within the last year, Orfila had been in the habit of selecting for experiment large portions of the animal body; and of decomposing these by the aid of nitric acid, so as to oxydize the arsenic, and destroy the whole of the organic matter. He had also recommended that the entire subject should be digested in water, and reduced to a sort of bouilli, or extract, previously to the addition of nitric acid—a process which, with some slight modifications, he appears to have pursued in the well-known case of Madame Laffarge. The Academy of Sciences having lately examined the various processes suggested for discovering arsenic in the organs of the body, have reported unfavourably of the use of nitric acid for this purpose; considering that the arsenic, if present, was liable to be lost in the violent effervescence and decomposition which ensued: and in an essay lately published, Orfila himself gives the preference to the use of nitrate of potash, as a deflagrating agent. This was accordingly selected in the case under examination. The blood amounted to about four ounces. In this, a quantity of nitrate of potash, sufficient, as it was supposed, to produce perfect deflagration, was dissolved, and the whole evaporated to dryness. The dried residue, which was of a dark-brown colour, weighed 584 grains. A portion of this powder was then projected into a platina crucible, previously brought to a heat of redness. Deflagration took place, with flame; but the quantity of nitre was evidently insufficient to produce perfect combustion, the residue being still carbonaceous. According to Orfila's instructions, more nitre was added, until the quantity of this salt employed in the experiments amounted to about one ounce and a half. The mass then underwent the igneous fusion, and the crucible was removed from the fire.

The saline residue was dissolved in water, and sulphuric acid was gradually added, until it was in excess. Carbonic acid was freely expelled; and, on evaporating the liquid, the whole of the nitric acid of the undecomposed nitre was driven off. When the bisulphate of potash began to be deposited, the clear liquid portion was poured off, and concentrated in a small capsule. The liquid was set aside, and the saline deposit in the two cases was washed with warm distilled water. In this way, about six drachms of a strongly-acid liquid were obtained; one-half of this quantity was introduced into a Marsh's apparatus, perfectly new, the purity of the zinc and sulphuric acid having been previously determined. The hydrogen gas evolved, burnt with its usual flame, depositing only water, without the least trace of sublimate of any description.

The remaining half of the liquid was evaporated to dryness, and the dry saline residue was heated in a tube with soda flux; but no trace of an arsenical crust appeared. Thus, so far as the blood was concerned, the results were decidedly negative.

The Liver.—In the examination of this organ, I adopted the carbonizing agent recommended by MM. Danger and Flandin, namely, sulphuric acid.

The portion of liver examined weighed seven ounces: it was taken from the large lobes, was rather full of blood, but perfectly healthy in structure. The whole having been cut up into numerous small pieces, these were placed in a porcelain vessel, and treated with one ounce by weight (¼) of strong sulphuric acid. Heat was then applied; and the pieces of liver entirely dissolv-

ed in the acid, forming a dark viscid liquid, which was kept continually stirred, until nothing was left but a dry and friable carbonaceous residue. During this operation, large quantities of sulphurous acid escaped, with the vapour of sulphuric acid mixed with empyreumatic animal matter. This last had a powerfully disagreeable odour, which infected the clothes of all present, and which was perceptible in the laboratory for many days after the operation. The time required for the perfect carbonization of the liver was three hours; and the dried carbon obtained weighed one ounce and a half. The carbonaceous residue was reduced to a finely-pulverulent state; and it was then treated with a mixture of one part of muriatic to three parts of nitric acid, in a quantity just sufficient to moisten the ash. The nitric and muriatic acids had been made in the laboratory; they had the maximum strength, and were absolutely pure. The mixture was then gradually heated; it acquired a brownish tinge, probably from the production of a small quantity of artificial tannin. The heat was now gradually raised; the mass being kept stirred, until every particle of acid had been expelled in vapour. It now again appeared as a dry friable black powder. The object of this proceeding is, of course, to bring to the highest degree of oxydation, or to the state of arsenic acid, any arsenic which may be present in the ash, either in the state of metal or of arsenious acid. The dry residue was then boiled in a small quantity of distilled water; and, on filtration, a liquid of a light yellow colour, and highly acid, was obtained. A portion of this, treated with nitrate of silver and ammonia, gave abundant evidence of the presence of phosphates. The liquid thus procured amounted to four drachms. It was acidulated with sulphuric acid, which rendered it slightly turbid; and it was then introduced into a Marsh's apparatus, which was perfectly new. Previous to its introduction, the zinc and sulphuric acid were found to be entirely free from arsenic or selenium. The gas burnt like pure hydrogen; and more than a dozen trials were made before the suspected liquid was placed in the tube; but nothing more than a film of water was deposited on the glass. The liquid for analysis being somewhat viscid, gave rise to the formation of froth; this, however, was got rid of by the addition of a little alcohol. On burning the gas, the flame at once presented the bluish-white colour indicative of the presence of arsenic; and, accordingly, on placing over it plates of glass, twelve minute metallic deposits, bearing all the physical characters of arsenic, were procured in a few minutes. The test, however, seemed to be near the limit of its range, the quantity of metal deposited being imponderable, and insufficient for the safe application of those chemical tests which have been recommended for the identification of arsenical sublimates. A saucer, the interior of which was moistened with a solution of ammonio-nitrate of silver, was then held above the flame, at about half an inch distance, when a faint yellowish precipitate took place, which was considered to be arsenite of silver. The result of this experiment, therefore, showed that arsenic was really present in the substance of the liver, although in extremely minute proportion.

The Spleen.—This organ weighed three ounces; it was rather small, and appeared to contain less blood than usual. It was divided into very small pieces; and these were digested at a moderat ly high temperature, in half an ounce by weight ($\frac{1}{2}$) of strong sulphuric acid. It was perfectly carbonized in two hours, and the dry ash weighed 280 grains. This ash was treated, like that of the liver, with nitro-muriatic acid; and the evaporated residue was then digested in warm distilled water. The filtered liquid obtained from this digestion was strongly acid, and more highly coloured than in the case of the liver; it amounted to twelve drachms: two drachms of this were placed in Marsh's apparatus; but although many trials were made, no appearance of arsenic could be obtained. The gas burnt like pure hydrogen; and nothing more than films of water resulted from its combustion. Thinking that this might be owing to my having operated only on one-sixth of the resulting liquid, the remaining ten drachms were concentrated by evaporation, to one

drachm and a half. This was then introduced into the tube, but with the like result;—not a trace of arsenic could be procured. Thus, then, it was evident that the spleen contained no arsenic.

Remarks.—It may appear extraordinary, that while, in the preceding case, the liver gave evidence of its containing traces of the poison, none was found in the blood and spleen. The affirmative result, in the case of the liver, might be referred to the accidental introduction of some arsenical compound during the process. Judging from Orfila's experiments, on the delicacy of Marsh's test, the quantity of metal contained in the liquid for analysis must have been under 1-1,000,000th part! On this point I would beg to observe, that the apparatus employed was new; the vessels were clean and new; and the nitric and muriatic acids, as well as the sulphuric acid and zinc, were perfectly pure; indeed, it must be obvious to all who consider their circumstances, that as portions of the same acids and metal were employed in all the experiments, had there been any admixture of arsenic in these, the poison would have been discovered in every instance. Without relying upon this fact, which must be conclusive of the purity of the articles employed, trials were separately made, to determine this point, before proceeding to the analysis. Then, it may be asked, how are we to account for the non-detection of arsenic in the blood and spleen? In regard to the *blood*, I may observe, that being anxious to give a fair trial to Orfila's process, and to compare it with that of MM. Danger and Flandin, I pursued strictly Orfila's injunctions as to the method of deflagrating the organic matter with nitre; although the result proved clearly that it is open to many objections; the most serious of which is, that the deflagration being carried on at rather a high temperature, the arsenic is likely to be partially or entirely dissipated. If, then, there should happen to be but traces of the poison in the substance analysed, none will be discovered. Again, the quantity of blood experimented on was much too small for obtaining satisfactory results. In referring to the numerous papers of Orfila on this subject, I find that the smallest quantity of blood in which he had succeeded in detecting arsenic was eight ounces; and he could only obtain about twenty small arsenical stains from the incineration of ten ounces of blood, although this quantity was actually abstracted from a living person labouring under the effects of arsenic. In the case reported, only four ounces of blood were originally taken; but as not more than one-half of the resulting liquid was employed in Marsh's apparatus, it is evident that the incinerated residue only of two ounces of blood was thus examined. The whole of the liquid was not submitted to the action of hydrogen, because it was considered proper to obtain, if possible, some other evidence of the presence of arsenic, besides that furnished by Marsh's test; the application of re-agents to minute suspected stains on glass being, in my opinion, in the highest degree objectionable. Thus, then, the quantity of blood, in this case, submitted to the action of Marsh's test was not more than two ounces, about 1-240th part of that contained in the adult subject. It is not therefore surprising that arsenic was not discovered; more especially, when we consider that seven ounces of liver gave only infinitesimal traces. It would, in my opinion, be advisable, in any future experiment, that the operator should take at least twelve ounces of blood, and carbonize it by sulphuric acid, rather than by the deflagrating action of nitre. In all these cases, our object should be, not to obtain mere traces of arsenic, but such a quantity of the poison, and in such a form, as to allow of the free application of many tests. The method pointed out by MM. Danger and Flandin is, in this respect, both simple and satisfactory. Next, with respect to the *spleen*. The same carbonizing process having been pursued as in the case of the liver, the non-detection of arsenic in this organ can, it appears to me, only be referred to the quantity of animal matter experimented on having been too small. The spleen weighed three ounces; and as only very faint traces of arsenic were found in more than double the

quantity of liver, it does not appear to me ex
not discovered in the spleen. It is possible t
sent in the organs of poisoned subjects may
cumstances; and that sometimes a larger, a
of animal matter will suffice to give satisfacto
ing the process of MM. Danger and Flandi
pound of animal matter should be taken f
that arsenic was really present in the liver o
explanation of its existence in the substance
to me, be, that it was introduced during lif
Imbibition could hardly be suspected; for the
that which was furthest removed from the
the extreme portion of the right lobe. Besi
fluence in thus diffusing the poison, it woul
the spleen, from its close contiguity to th
there was none present. As imbibition can o
of a liquid—and the liquids of the stomach g
arsenic dissolved—it seems to me that an ex
to the ground. Such are the facts of this
dealt with according to the judgment of th
who are interested in this subject, and who r
cesses here described, to "Orfila Rapport
présence de l'Arsenic, &c., 1841. MM. Da
1841." Since writing the above, I have bee
had succeeded in procuring, from about fou
subject, faint traces of what he considered
Marsh's apparatus. The process which he
that recommended by Orfila. The anima
nitrate of potash; but at a very low degre
probability of the arsenic being dissipated.

[In the experiment of Dr Rees, several de
a small quantity of nitrate of potash being
was performed in a china-ware dish, and the
—Ed. of Guy's Hosp. Reports.]—*Guy's H*

Poisoning by Cyder, containing

Six individuals, after drinking cyder for a
usual symptoms of poisoning by lead, as viol
pains in limbs, with the attendant trembli
usual remedies. MM. Chevallier, Olivier, a
vestigate into the mode in which the cyder
lead, and found, that, during its preparatio
for two days in a reservoir which was line
nized that the salt of lead which existed in
they found to be a soluble salt. The only
this circumstance, as both Thomson and I
lead as an insoluble salt; and it is well that
fact of its solubility.—*Ann. D'Hygiène Publ*

PART FOURTH.

MEDICAL NEWS.

FRENCH ACADEMY OF SCIENCES.

4th April.

1. *Memoir on the Employment of Iron in Marsh's Apparatus, and on a new Metallic Compound of Hydrogen,—"Ferrated Hydrogen." By M. Dupasquier of Lyons.*—In applying Marsh's apparatus to the detection of arsenic, it has been usual to consider it of little consequence whether zinc or iron be employed for the purpose of obtaining a disengagement of hydrogen gas, although in practice the preference has for no very particular reason been given to the former. It is not, however, so indifferent a matter; for M. Dupasquier finds, that in using iron, a combination takes place between it and a portion of the hydrogen, and a *ferrated hydrogen gas* is formed, which reacts with the metallic solutions, and with chlorine, bromine, and iodine, in the same way as the combinations of hydrogen with arsenic and antimony. For these reasons, iron ought never to be employed in Marsh's apparatus; indeed, not only does it give rise to appearances similar to those supposed to indicate the existence of arsenic, but its presence almost entirely prevents the formation of the compounds of hydrogen with arsenic or antimony, which it is our object to obtain by the use of that apparatus.

2. *On the Action of Madder in the Coloration of Bones, and of the Shell of the Egg in Fowls. By Marc Paolini.*

11th April.

1. *Composition of the Atmospheric Air.*—M. Dumas communicated to the Academy the results of the analyses made by M. Stap at Strasburgh, which are almost exactly identical with those attained at Paris by M. Dumas himself.

2. *Election.*—M. Oersted was, on a scrutiny, nominated a Foreign Associate of the Academy, in room of M. de Candolle.

3. M. Flourens presented to the Academy the second section of his experimental researches in the properties and functions of the nervous system in the vertebrata.

18th April.

1. *Poisoning by Bi-Oxalate of Potash.*—M. Bodichon gave the particulars of a case in which a physician having prescribed an ounce of the tartrate of potash, to be taken in two doses, the apothecary gave in its stead that quantity of bi-oxalate of potash, which the patient took in one dose, from the effects of which he died. The author has performed some experiments upon animals with this substance, and has found a species of paralysis to supervene upon its administration.

2. *Elections.* — M. Francœur was nominated an Academician. On the scrutiny, M. Pariset was found also to have obtained three votes, and M. Corabœuf two. M. D'Omalius D'Halloy was also nominated, on a scrutiny, Corresponding Member of the Academy in the section of Mineralogy and Geology.

25th April.

1. *Composition of the Fatty Substance of the Milk. By M. de Romané.*—It is well known that the milk holds in suspension globules of a particular nature, which, in virtue of their specific lightness, have a tendency to rise to the surface, and when

united together by the operation of churning, form the butter. It has bee
that a chemical action took place in the formation of the butter, consisti
combination of the fatty substance with the oxygen of the atmosphere; but
nion has been overturned by MM. Thénard and Donné, who have shown t
can be formed *in vacuo*. The conclusions at which the author has arrived
at the moment of its emission, the milk contains in their perfect state the
from which the butter is formed; these consist of the butter in the state o
matter, enveloped in a white thin transparent and elastic pellicle. The mode
butter is yielded by churning, is purely mechanical, consisting simply in th
of these envelopes effected by that operation; and the reason that the butte
ed all at once, and not gradually, is that their tenacity is nearly of equal for
all; whence it follows that they nearly all give way about the same ti
thickened appearance of the butter milk, is owing to the suspension in it
mains of these pellicles, and its acidity to the diffusion through it of the a
they contained before their rupture. This organization admirably serves
poses of nature; were the envelopes less tenacious, they would give way u
pressure of the tongue of the young animal in suction, or from the heat of t
viæ, and so the butter would be at once received into the stomach, where it
undergo the process of assimilation at that tender age.

2. *Structure of the Spleen. By M. Bourgery.*—The author has found by
of microscopic observations, that the spleen consists of two portions,—one
consisting of blood-vessels in the state of cells, the other lymphatic. The n
small glandular bodies distributed throughout the organ is so great, that,
they would constitute nearly a third of its volume. Lymphatic vessels are
to pass and maintain a communication from one to the other of them.

3. *Solution of Urinary Calculi.*—M. Longchamps, in reference to a repor
subject, read at a former meeting, brought forward arguments to show, th
of the waters of Vichy, and other alkaline drinks, was not, as had been alle
to favour the formation of certain kinds of urinary calculi.

2d May.

Solution of Urinary Calculi.—A letter was received from M. C. Pétit, wr
the same view as so many other communications lately made to the Acade
defend the waters of Vichy, &c., against the charge of causing the for
urinary calculi.

6th June.

1. *On the Composition of Confined Air. By M. Leblanc.*—The followi
principal conclusions at which the author arrives:—1*st*, *Air of greenhouses*
air collected in the evening, the relative proportions of oxygen and nitrogen
same as those in the open air; but the carbonic acid was found to have c
disappeared under the influence of vegetation. *Air of bedrooms.* In the o
mented on, there had been a fire during the afternoon. Eight hours aft
been put out, the air showed on analysis the same composition as that of
Air of hospitals. In the ward "rosaire" at La Pitié, which had been
during the night, the air contained nearly 3-1000ths of carbonic acid, or
five times greater than that of pure air; the oxygen had experienced a co
ing loss. In one of the dormitories of La Salpetrière, the air gave 8-1
carbonic acid. This is the largest proportion the author has yet found in
Air in public lecture rooms. In the lecture room of the Sorbonne, which
of containing 1000 cubic metres of air, after a lecture of an hour and
length, and at which 900 people were present, the oxygen was found to
one in every 100, although two doors were open; while the carbonic acid
increased in a greater ratio. This proves, in a marked manner, the utilit
cial ventilation in like circumstances.
Air in a ward in an institution for children. Although the door was half
there was an open *space* in the roof, (*visistas*,) the air was found to contain
of carbonic acid, and a proportional diminution of oxygen.
Air in a schoolroom. This room (that of the 11th Arrondissement) was
by means of an apparatus constructed by M. Réné Duvoir, after the met
Péclet. When the room had been occupied five hours, 16-10,000ths of o
disappeared, and the carbonic acid had increased to more than 2-1000ths.

Air in the Chamber of Deputies. The carbonic acid was 25-10,000ths, and it is likely that the proportion would be more than double on those occasions when the chamber was twice as well filled as it was on the day that the experiment was made.

Air in a theatre. At the Opera Comique, a little before the close of the performance, the air of the pit contained 23-10,000ths of carbonic acid, and in the highest part of the theatre, it even rose to 43-10,000ths.

Air in the stables of the Ecole militaire. In one of the stables, one part in every 100 consisted of carbonic acid; and in another, 2-1000ths only of this gas were found. M. Leblanc has made a number of experiments, which prove, that animals can support, without sinking immediately, carbonic acid in larger doses, than what is found in air rendered fatal by the introduction of this gas from the combustion of charcoal. We must then seek for other causes to explain the violence of the effects seen in this latter case.

We ought to admit, as experiment has proved, that the quantity of carbonic acid in close and confined situations, and which is almost always appreciable, should increase according to the presumed degree of insalubrity. The greater the quantity of carbonic acid, the more is the necessity for a renewal of the air; and respiration cannot be carried on in a normal manner, if it exists in the proportion of one part in 100. From the experiments of M. Péclet, from six to ten cubic metres of air are required per hour, in order that the respiration be carried on in the usual way. These partially agree with M. Dumas' experiments on respiration. In places which are inhabited, and which have no proper apparatus for ventilation, and are without chimneys, the air is renewed very imperfectly by the joints in the doors and windows, and only twice as well as in a room completely closed. Life cannot be prolonged beyond a few moments, where the atmosphere contains thirty parts of carbonic acid in every 100. The higher the natural temperature of an animal, the less can it resist the asphyxia from carbonic acid. There is no decisive experiment on the degree of alteration which the air must undergo before it becomes asphyxiable by the burning of charcoal. M. Leblanc has shown, that an atmosphere containing three or four of carbonic acid in every 100 parts, proved suddenly fatal to a large dog. This was totally independent of temperature, and death took place before a candle ceased to burn.

2. *On the Structure of the Nervous System. By M. Mandl.* — The centro-spinal nerves, according to the author, are composed of transparent fibres, running in a parallel direction. They undulate, but never anastomose with each other. At the external border of each line, an internal one is seen, so that these primitive fibres may be named filaments, with a double outline. Their diameter varies from 0.05 to 0.02 of a millimetre. From acting on them with water and other reagents, the external line appears to belong to a sheath, enclosing the internal one. This latter, which was transparent at first, becomes coagulated from the reagents used, and assumes a globular form, giving rise to the erroneous opinions of authors on the globular nature of the nervous structure. The white substance of the brain consists of filaments with double outline, which decrease in diameter as they approach the grey substance. The thinnest fibres, which have only a diameter of from 0.001 to 0.002 of a millimetre, do not show a double outline. The globular or beady form seen, is owing to the destruction of these fibres, which are very soft.

The nerves contain many fibres of a single outline, from 0.003 to 0.004 of a millimetre in diameter. A nerve is never composed entirely of one of these classes of fibres,—they are always mixed together; but there is a preponderance of one or the other, according to the nerve examined. The anterior and posterior roots of the spinal nerves have no distinctive character under the microscope. The contents of the encephalon contain several distinct elements, as the grey and white matter, and the "corpuscules gris et ganglionnaires." From his researches, he concludes, that the nervous system is composed of two portions, a white and grey; that each of these consists of a centre and periphery; that the central portion of the white matter is found in the white substance of the encephalon and spinal marrow, and its external or peripheric part in the centro-spinal nerves; that the central portion of the grey matter is found in the grey substance of the nervous centres, and its peripheric part in the ganglionic system. In both divisions the elementary fibres are most distinctly recognized in their respective peripheries. Each part of the nervous system contains fibres of the other portion.

13*th June.*

On Poisoning by Antimony. — M. Flandin read a paper on experiments which h and M. Danger had been performing with this substance, from which it appear that antimony is easily eliminated by the urine. It is chiefly found in the liver, an not at all in the lungs, nervous, muscular, or osseous systems. It is very importan to ascertain the fact of the localization of poisons, as it would prove exceedingl useful in medico-legal questions, as in cases of pretended poisoning.

20*th June.*

We have no space for a report of this meeting.

27*th June.*

Development of Entozoa. By M. Mandl. — A note was read by M. M. on th existence of the ova of entozoa in animal tissues. The *ascaris nigrovenosus*, which i frequently found in the lungs of frogs, has been brought forward to prove the doc trine of the spontaneous generation of the entozoa. M. Mandl, however, by the aid of a microscope of 250 diameters, has been able to detect the coloured ova of these entozoa in the lungs of frogs, without finding any trace of the animal itself in that organ. This fact, he says, renders it very probable, that these small ova, the diameter of which scarcely exceeds four times that of the globules of the blood of the same insect, has been carried to the lungs either by respiration, or some other way.

4*th July.*

1. *On Artificial Anus in the Lumbar Region.*—The paper on this subject by M. Amussat was more particularly confined to the performance of this operation in young infants with imperforate anus. It is only to be had recourse to, however, if the bowel cannot be found in the region of the perineum, and the incisions should always be crucial, and not longitudinal. Although an open anus in the loins is a very disgusting infirmity, yet the patients do not suffer such inconvenience from it as is generally supposed, and as those do, in whom the bowel in the operation of hernia is found gangrenous. In the latter, the fecal matter flows involuntarily and continually, as it is the ileum which is affected; whereas, when the opening is in the colon, it is not unfrequently necessary to give medicine to prevent constipation.

2. *Nature and Treatment of Small-Pox. By M. Seigneurgens.*—The author is of opinion that this disease is owing to a specific cause, viz. the presence of insects, and that the treatment which should be adopted is that by mercurials, either internally or externally.

M. Serres remarked, that the opinions of M. Seigneurgens were not new, and that many microscopical examinations had been made to discover the insect, but always as yet without success. He thought that the fact of the pustules not coming to maturity when deprived of light and air, was a circumstance favourable to the hypothesis that the disease depended on insects. He made a few observations on vaccination,—a subject which, from the prizes offered on it by the Academy, would soon be generally discussed. He had seen from 1700 to 1800 cases of small-pox, and he could affirm, that those who had had the disease twice, were as numerous as those in whom it had occurred after one vaccination, from which he was led to conclude, that there were individuals and families who had a predisposition to take small-pox twice, as there were others to take it only once.

3. *On Entozoa found in Frogs.*—A letter from M. Gruby was read on the entozoa found in frogs, in which he said that they were by no means uncommon in the lowest vertebrated animals, and that he had frequently detected their ovules circulating in the blood.

11*th July.*

1. *On the Membrana Decidua. By M. Coste.*—The following are the conclusions:—

1*st*, That the membrane does not always form a perfect bag, as in the human species there are two openings for the Fallopian tubes, and a third towards the os uteri.

2*d*, That it is not in juxta-position with the inner wall of the uterus, but adheres to it by such a thin continuity of structure, that it is impossible to define the limits of the mucous membrane of the womb, so that they both appear one tissue.

3*d*, That instead of being without texture, it contains a number of vessels of such

a size, that we can only compare it to the spleen or thyroid gland drawn out, so as to cover the ovum as it were in a lake of blood.

In his next work, M. Coste proposes to treat of the way in which the maternal blood arrives at the placenta, and of the part which the membrana decidua takes in its formation.

2. *Re-Vaccination.*—M. Lemazurier sent to the Academy an account of 109 re-vaccinations which had been made on the pupils of the Royal College of Versailles. All of them on entering the college had given certificates of having been vaccinated; some had already been re-vaccinated without success, and all, with the exception of 15, had a vaccine mark on the arm. Their age was from 14 to 15. Both arms were vaccinated. The following are the results observed on the fifth day after the operation:—

In 6, the operation was unsuccessful.
— 27, all the true characters of the vaccine vesicle were seen, and in some, the inflammation was intense.
— 25, the vesicles were intermediate between the true and false vaccinia, and were characterized by being precocious and of a conical form.
— 51, the ordinary false vaccinia was observed. It had already gone on to desiccation.

Those in whom the true vesicles had formed, were examined two days after, when they (the vesicles) were doing well, and much larger.

3. *On the Termination of Nerves. By M. Mandl.*—The author directed attention to the three following points:—1*st*, That at whatever age an animal is examined, the nerves are always seen to end in loops. 2*d*, Nerves of young animals are not always provided with a sheath. When the parenchyma is forming during the development of an animal, it commences by the production of some corpuscles between the primitive fibres of the fasciculus, so as to separate one or more of the elementary fibres from the rest of the fasciculus. In proportion as the corpuscles are developed, the primitive fibres, which at first were only slightly separated from the direction of the fasciculus, become more and more apart, so as to form at last a true loop. From these observations, it would appear that the number of primitive fibres in old and young animals is the same, as M. Mandl has never been able to discover any fibre dividing into two. 3*d*, The retina is composed of two portions. The internal, or that next the vitreous fluid, is composed of the same elements as the grey substance of the encephalon, the other, the external or white portion, besides the vessels and the expansion of the optic nerve, contains the particular elements which the author calls small rings (*baguettes.*) These are placed obliquely, and are from 1-100th to 1-50th of a millimetre in length in birds, and 1-300th in breadth. At their outer surface, there is an oily globule of a yellow or red colour, whilst their inner is terminated by a very fine filament.

18*th July.*

1. *New Alkali extracted from Quinquina.*—M. Manzine read a paper on this new substance, which he calls chinchovine. The quinquina Jaën of commerce, which is the white quinquina of La Condamine, and the bark of the cinchona ovata of the Flora of Peru, has been always considered as destitute of the febrifuge properties of the other barks, and in consequence has been rejected for medical use. I have never been able, he says, to discover in it either quinine or cinchonine, but I have been able to detect a new vegetable base, which I call chinchovine, or quinovine, (from cinchona, or quina ovata.) This substance is prepared exactly in the same way as quinine. It appears in the form of prismatic crystals of a long shape, white, inodorous, and of a bitter taste; from their little solubility, they are some time of being developed. It is very soluble in alcohol, more especially if it is warm, less so in ether, and almost totally insoluble in water; weak acids dissolve it, and form salts, which in general crystallize easily;—these are very soluble even in weak alcohol, more so, however, in cold than in hot. They are precipitated by the alkalis and their carbonates, and the chinchovine is separated from them by the ioduret of potassium, the bichloride of platinum, the chloride of gold, and other metallic chlorides. Ammonia also throws down the salts of chinchovine, and sets their base free; a part only, however, of the chinchovine is precipitated in the insoluble state; and this is more especially the case, if the excess of ammonia is considerable, for a part of the base remains dissolved in the ammonia, and as this evaporates, the rest of the chinchovine is deposited in crystals. That portion also of chinchovine which was thrown down in an

amorphous state, gradually changes into a crystalline mass of dazzlir
of-pearl lustre. Two or three days are required before this appea
The alcoholic solution of the chinchovine is very bitter. It restores
of litmus when reddened by acids, and turns the syrup of violets gre
submitted to a temperature of 150°, its aspect and weight remain th
is exposed to a heat of 188°, it melts into a liquid of a brownish col
ing volatilized. As it cools, it assumes the appearance and colour o
face is cracked; in this state its weight is the same as before fusion,
jected again to heat, it melts at the same temperature. When fused
chinchovine is equally soluble in boiling alcohol, and is deposited
When exposed to 198°, it is quite decomposed, furnishing empyreum
a very fetid odour, and a quantity of carbon. These experiments sho
chovine is completely anhydrous. The composition of chinchovine is

C^{40} .	3450·00	69·80
H^{54} .	337·50	6·83
AZ^4 .	354·08	7·16
O^{11} . .	800·00	16·21
One equivalent of chinchovine,	6941·58	100·00

These theoretical numbers agree very well with those obtained
Besides, their correctness is confirmed by the analysis of the bi-sulph
vine. This salt is easily prepared by dissolving the base in a slight
sulphuric acid, and leaving the solution to crystallize. The following
obtained.

		Calculated.	Ob
C^{46} .	3450·00	55·92	5
H^{58} .	362·50	5·88	
AZ^4 .	354·08	0·00	
O^{10} .	1000·00	00·0	
$2SO^3$.	1002·24	16·24	1
One equiv. of the bi-sulph.	6168·02	100·00	10

And the atomic formula of the salt will be,—$2SO^3\ C^{46}\ H^{54}\ AZ^4O^8$ +

2. *Membrana Decidua.*—M. Lesauvage of Caen wrote to the Academ
priority of some ideas which M. Coste brought forward in his last w
velopment of this membrane,—opinions which, he says, he publisl
a pamphlet, entitled "Researches on the Development, Organizati
tions of the Membrana Decidua."—(*Vide* p. 1084.)

25th July.

1. *On Pulmonary Consumption in Man and Animals.*—M. Rayer rea
on this subject, of which the following are the conclusions:—

1*st*, Of all chronic diseases, pulmonary consumption is the most c
and animals.

2*d*, In man and other mammalia, the tuberculous matter can alway
tinguished from recent pus, which is loaded with seed globules. In
racters of tuberculous matter are less marked; foreign bodies intro
lungs and flesh, do not produce an opaque white humour, full of seed
dry yellowish matter, without globules, whose physical characters ap
tubercles in the mammalia. In reptiles, fishes, and insects, the charact
are still less distinct.

3*d*, Pus, in the mammalia, and chiefly in the horse, if it remains long
undergoes successive transformations, so that at last it resembles tuber

4*th*, Pulmonary tubercles in man and in the quadrumana have ge
colour; in the *pommelière* of the cow the tuberculous matter is yellowi

5*th*, In man and animals the softening of the tuberculous matte
cannot be attributed to inflammation, as no pus globules are ever see
ing, however, on the circumference is much assisted by the inflammati
tiguous tissues, and it is almost always mixed with pus globules.

6th, The yellow matter which is found in the cysts of hydatids in the ruminantia after the destruction or spontaneous rupture of the cysts, has some analogy with tubercular matter, (*pommelière;*) but the cysts of this yellow matter almost always contain the debris of the hydatid pouch, and sometimes a certain quantity of pus.

7th, The cretaceous or calcareous concretions (principally composed of carbonate and phosphate of lime) which are met with in the lungs of man, and other animals, ought not to be considered, as they are even to this day, as being almost always a modification of tubercle. They are frequently in man, and very often in the horse, the residue of a small depot of pus.

8th, Granulations depending on worms and on glanders form in the lungs of several animals, which ought to be distinguished from tuberculous granulations.

9th, Among the quadrumana, and some birds brought from warm climates, consumption shows itself in its greatest degree, and almost to the exclusion of other chronic diseases. It is equally often produced in other animals coming from the north, as the rein-deer, by a change of climate and food.

10th, Consumption, which is rare among the domestic herbivorous (solipedes) animals, is still rarer among the carnivorous. However, notwithstanding the preservative influence of a strong constitution, and an animal diet, several of the carnivora, as the domestic cat, and especially the lion, tiger, and jaguar brought to our country, have been seized with phthisis. This rarity of consumption is also seen in birds which are rapacious.

11th, By a kind of contradiction, the domestic dog among the carnivora, and the hare among the herbivora, are less subject to tubercles than to cancer, a disease which Camper thought never attacked the lower animals.

12th, Among the ruminantia, and especially in the class boves, consumption is often associated with vesicular worms, and particularly with the echinococtus; but, contrary to the opinion several times given, there is no transformation or succession between these hydatids and tubercles.

13th, Fatty liver is the common accompaniment of consumption in man, and general obesity in birds.

14th, The alterations of bone which are observed in simiae affected with this disease, and more particularly in those from New Holland, appear analogous to the deformities, swelling, and spongy softening of the bones seen in phthisical and scrofulous children. Similar alterations of bone take place among the carnivora brought to this country from a warmer climate.

15th, If the frequency of pneumonia, and the rarity of consumption in the domestic dog, would appear to do away with any connection between these diseases, the same thing cannot be said to occur in the calf, cow, or female ass, as in these the deposit of tuberculous matter almost always coincides with a chronic and increasing pneumonia.

16th, Consumption is hereditary, but it is almost never congenital, even in the rudimentary state.

17th, Among people affected with phthisis, the semen contained in the seminal vesicles contains few or no spermatic animalcules.

18th, Ulcers in the larynx, trachea, and bronchi, do not indicate the same thing in man and animals. In the former, they are almost always owing to consumption, and sometimes to syphilis; among the quadrumana to general tubercular diathesis, and among quadrupeds almost always to glanders.

19th, In pneumo-thorax, mouldy vegetations may form on the altered pleura of a phthisical patient, as sometimes takes place in the air-sacs of birds affected with consumption, or other disease of the respiratory organs. In this case, as in all those which have been observed among the vertebrata, the development of these parasites is a secondary phenomenon.

M. Rayer classes the causes of consumption under four heads: A domestic state and captivity for the inferior animals, and misery and fatigue for man; and he concludes that science, which is altogether powerless in curing the disease, ought not to be so in preventing it.

On the Utero-Placental portion of the Decidua. By M. Coste.—The following are the conclusions to which he comes in his paper:

1st, The uterine portion of the decidua constitutes, with the membrane which covers

the external face of the placenta, and which penetrates its whole thick membrane, as the two are a direct continuation with one another, and cular apparatus forms in their walls a special system quite characteri them both, if we may so say, a kind of individuality.

2*d*, Thus the uterine portion of the decidua existing equally betwee and womb, as every where else, forms consequently, round the ovu covering which surrounds it on every side.

3*d*, It constitutes in the midst of the villi of the chorion a web of v which helps to form the placenta; it retains these villi united together a cake, and consequently, we must admit the existence of a maternal the portion of the decidua which constitutes it, keeps it next the womb of tissue, and prolongs the vessels of the mother to the fœtal portion placenta.

1*st August.*

On the Cause and Treatment of Goitre.—A communication was the Academy by M. Pascal, on the local influences which assist in the of goitre, and on the use of ferruginous mineral waters in preventing a affection. From the observations of MM. Bénédict, Fodéré, and Roul 1*st*, That the stagnation of humid air, whether cold or warm, eminentl to this disease, and that all the moist gorges of the mountains towards more particularly the localities in which bronchocele exists to the gr 2*d*, That the use of impure cold water, as the habitual beverage, is, say, the exciting cause of the affection in those places already predi water from wells, cisterns, and pumps, is said to be the most injurious.

M. Pascal then directed attention to the following fact:—At about t from Metz are three villages, named Pierre Villers, Rombas, and Villers all of which are similarly situated as regards hygiène, with the excep lers had a chalybeate spring, which was generally used by the inhabita ing and drinking. Now fifty years ago, while goitre attained a large s very common in the two other villages, it was unknown in Villers; a served, that those who came to reside in it from Pierre Villers and cured if they were already affected with the disease, or if they had it no mencement of their residence, continued free from it. From this circ cannot but admit that the chalybeate was the cause of the inhabitants being affected with bronchocele. Since the above period goitre has al disappeared from the other two localities, owing to the improvement taken place in the condition of the atmosphere, in the houses of the vill the food of the inhabitants.

From these facts we may conclude, 1*st*, That notwithstanding the h stagnation of the atmosphere, the use of a chalybeate water prevents ment of goitre, and cures it when it is formed; and, 2*d*, That even when nous spring exists, amelioration in hygiène greatly counteracts the pred the inhabitants to be affected with bronchocele.

16*th August.*

On the Revivification of Microscopical Animalculæ. By M. Doyère.- Edwards read, in his own name, and in that of MM. Dumas and Bre moir by M. Doyère, on the revivification of the tardigrades and rotifers known, that by pouring water on moss, which has been kept dry for mon for years, we rescuscitate microscopical animalculæ; and although mo gists are acquainted with this fact, yet it has not been considered by resurrection or revivification. Some are of opinion, that the moss still re tain degree of moisture, sufficient to keep the insects alive; others, th the insects are killed, the ova deposited by them are hatched; and others the insects only undergo a degree of torpor, from which they are freed tion of the water. The following are the results of M. Doyère's experi endeavour to ascertain, if possible, which, if any, of these theories, is the

By the aid of the microscope, M. Doyère has been able to discover, in small bodies, which bear a complete resemblance to the dried bodies of he says, that it is possible to revivify an insect after it has been dried glass, and not surrounded with any substance which could preserve it fr

nary effects of evaporation. To insure their perfect desiccation, M. D. exposed several tardigrades for five hours in the exhausted receiver of an air-pump, over a bath of pure sulphuric acid. Some he dried on glasses, and others he left for thirty days in the vacuum of a barometer produced by the chloride of calcium; and in all these instances he brought the insects to life again. Although these experiments may appear quite conclusive as to the perfect desiccation of the insects, yet to make them still more decisive, M. D. had recourse to the following. He discovered that all these animalculæ die when exposed to a certain degree of temperature, viz. 50° of centigrade, or below the point at which albumen coagulates; and that if the water in which they swim is heated to 45°, it is then impossible to recall them to life. But he found also, that if they are first dried, and then exposed to heat, the result was different. When all humidity was removed from them by the ordinary means, and they appeared quite dead, they could be revived, even after exposure to a temperature which must have disorganized all living animal tissue, only containing the water combined chemically with its constituent principles. In one experiment performed before the commission, the temperature to which the animalcules was exposed was 120°.

M. Doyère has also turned his attention to the anatomy of these insects, and his researches are full of interest and instruction. In conclusion, the commissioners, after complimenting M. Doyère, recommended to the Academy that his work should be printed. These conclusions were adopted.

On the Absorption of Medicinal Substances. By M. Mialhe.—The author arranges into two classes all substances capable of being absorbed. In the first, he includes all those which cannot form an insoluble compound with the albuminous elements of the blood, such as the alkaline oxides, their carbonates, and several of their other saline compounds; the oxygenated compounds of arsenic and antimony; the hydrocyanic and carbonic acids; ammonia; all the neutral gases; almost all the vegetable acids; all organic bases; and the greater part of colouring and odoriferous substances. These all act immediately on the nervous system, and pass quickly into the urine. In the second class are comprised all those which can form an insoluble compound with the albuminous elements of the blood. These are, the inorganic acids, a great many metallic salts, as of iron, copper, lead, mercury, silver, tannin, creasote, &c. They never act directly on the nervous system; and their action is so much the slower, as the albuminous compound which they produce at first is less under the solvent influence of the soda and alkaline chlorides which are contained in the different fluids of one body; and it is only after having been submitted to the agency of these, that they pass into the urine. The general principles given in the paper explain satisfactorily a number of questions relative to the absorption of different substances which formerly it was difficult to understand.

22d August.

On the Action of the Eclipses of the Sun on Animals.—M. Arago, in his report on the last eclipse of the sun, said, that authors had not exaggerated the stupor into which animals were thrown on the disappearance of that luminary. The following phenomena were observed to take place at the late eclipse:—a number of cattle in a field were seen to form themselves into a circle, so as to oppose a front on all sides to the supposed approaching danger. A dog who had been kept fasting during the day before, and to whom food was given at the commencement of the eclipse, and which he was greedily devouring, immediately stopped eating as soon as the darkness came on. M. Fraisse observed a number of ants halt in their progress, and remain stationary, until the light returned. The horses in the diligence, which were accustomed to travel day and night, did not stop; but those that were at large and in fields were very restless and uneasy during the whole time of the eclipse. Of five linnets that were confined in a cage, three died; fowls went to roost; and the sheep congregated in small knots, hung their heads, and showed every sign of fear.

5th September.

Minute Movements of the Lungs, and a New Cause of Emphysema.—M. Longet read a paper on this subject, of which the following are the conclusions:—*1st*, When galvanism is applied to the branches of the nervus vagus, sent to the first divisions

of the bronchi, manifest contractions are seen to take place, especially when the experiments are performed on large animals.

2*d*, Division of the pneumogastric nerves may be followed by pulmonary emphysema.

3*d*, The results of the experiments prevent us from admitting, that the walls of the aeriform vesicles of the lungs, whether cellular or capillary, are only formed of fibrous elastic tissue.

4*th*, These walls are possessed of active contractile power, owing to the par vagum.

5*th*, When this contractility is destroyed by the section of the par vagum, the air cannot be renewed in the minute cells, although their elasticity still continues.

6*th*, The circulation becomes slow, and even stops in the walls of these vesicles, which are forcibly distended with vitiated air, saturated with carbonic acid.

7*th*, Emphysema, when complicated with pulmonary congestion, cannot be regarded as favourable to an artificial respiration, and constitutes a cause of asphyxia, after the section of the par vagum, which we must join to the closing of the glottis, &c. &c.

On a New Species of Contagious Sycosis. — M. Gruby, in his paper, described this disease as occurring on the hairy part of the face ; but particularly on the chin, upper lip, and cheeks. It consists of white, grey, or yellow scabs, from two to six millimetres broad, and from three to eight long. These are traversed by the hairs, which do not adhere firmly to the skin, so that in removing the scab, the hair comes away also by the root. On examining the hairs by the microscope, it is found, that all their dermatic portion is surrounded by cryptogamic plants, forming a vegetable layer between the sheath of the hair and the hair itself. M. Gruby, in consequence, wishes that this disease, with favus and aphthae, which he considers as composed of parasitic plants, should form a distinct class, known by the name of nosophyte.

On a New Mode of Arresting Epistaxis.—M. Negrier communicated five cases as confirmative of the success of his new mode of arresting epistaxis, which consists in raising, and keeping raised, one or both arms. He says, that as soon as the arms were raised, the bleeding stopped ; and that in the five instances he reports, the hemorrhage was finally arrested.

19*th September.*

On Empyema. By M. Faure, of the Military Hospital at Toulon. — The author, in his paper, after having attempted to establish, that in the majority of cases of pleuritic effusion, the evacuation of the fluid from the chest is the only chance that the patient has of being saved from an almost certain death, goes on to say, that the danger of the operation by the trochar has been much exaggerated ; that no air enters the chest ; and that often after forty-eight hours, no remains of the puncture are visible. Then, after mentioning that more than 200 people die annually from effusion into the thorax, whose lives might be prolonged by the operation, or at least their last moments rendered less painful, he relates three cases in which he operated last May. One died some days after the puncture; but the other two were still alive on the 31st of July, the latest period at which M. F. had received any account of his patients.

Nervous Asthma. By M. Ducros. — Experience, the author says, has shown, that the application of ammonia at 25° over that part of the vertebræ which corresponds to the pharyngeal plexus, has the power of arresting, in an almost instantaneous manner, the greater number of attacks of nervous asthma. Nine cases are cited in proof of the efficacy of the treatment.

On Aphthae of the Uterus. By M. Conté de Levignac.—The author maintained, that these were much more common than was supposed, and that the cases of cancer which were said to be cured, were only cases of this disease.

26*th September.*

On the Biliary Circulation. By M. Amussat. — The following are the conclusions of the author's paper :—1*st*, The gall bladder and the biliary canals are provided with fleshy fibres ; and this apparatus empties itself, not only by means of the pressure excited upon it by the neighbouring organs, but probably also by an action proper and peculiar to all reservoirs and contractile canals.

2*d*, That the true disposition of the cystic valves, which only exist in man and in apes, is more or less spiral. This form, which was pointed out by Ruysch, and is now forgotten, appears to serve the double purpose of favouring the ascent of the bile into the gall bladder, and of preventing its too sudden exit.

3*d*, That the narrow orifice of the ductus choledicus in the intestine, compared to the capacity of the canal, is the physical cause which forces the bile to remount into the gall bladder. This is another fact proving that physical phenomena play a great part in the performance of the functions of our organs.

4*th*, That the situation of the biliary apparatus, when man is erect, does not allow — except when the stomach and intestines are empty — the bile to arrive in the gall bladder by its own weight, as was supposed formerly, without the fact being verified.

5*th*, That in all animals who are without hepaticocystic ducts, the bile ascends into the gall-bladder against it sown weight, which phenomenon, as I have already said, is owing to the narrow orifice of the ductus choledicus in the duodenum.

6*th*, That comparative anatomy confirms the result of my experiments on man, and shows how nature, by various means in different animals, attains the same end. Thus, in quadrupeds, the disposition of the biliary apparatus is such, that the bile must always ascend against its own weight, as it does in man when poured into the gall-bladder. This fact has been verified several times in presence of M. Blainville, who has encouraged me to pursue my work.

7*th*, That experiments on living animals prove, thatt he gall-bladder, like the urinary bladder, cannot be made to contract. However, it does contract, or narrow itself, as in a short time it empties itself, as I have several times seen with M. Magendie. The biliary canals, again, in birds, contract most evidently, and even more forcibly than the intestines. The orifice of the ductus choledicus is very small, and the bile flows drop by drop from it as distilled and propelled in some birds.

8*th*, That medical science may draw some light from the demonstration of this physiological fact; but it will be chiefly from new researches in pathological anatomy, founded on the normal disposition of the termination of the ductus choledicus.

9*th*, I confess, that the result of my experiments on the bile has not been so successful as those on the urine.

3*d October*.

Articular Dropsy.—A note on this subject was communicated by M. Velpeau. After detailing the success he had met with in several cases of bronchocele and serous cysts, by injections of iodine, he concluded by saying, that in his wards in La Charité, he had at present four men under his care affected with dropsy of the knee-joints, in all of whom an iodine injection had been thrown into their knee-joints, and that they were all doing well. He hoped to be able to cure articular dropsy, by this kind of injection, as easily as hydrocele.

10*th October*.

Elective Action of Medicines.—M. Coze, Dean of the Faculty of Medicine at Strasburg, communicated to the Academy the result of some experiments which he had been making on certain classes of agents employed in medicine. He concludes as follows:—

1*st*, That volatile substances introduced into the system, have a tendency to be eliminated by those organs which in a physiological state produce gaseous secretion, as the lungs and skin.

2*d*, That substances which contain similar principles to those of a secretion in a healthy state, are eliminated by the organs of that secretion.

3*d*, That substances which enter into the composition of an organ, when given as medicine, are carried towards that organ.

4*th*, That among the substances which do not form part of the natural structure of the solids and fluids of the animal economy, there are some which follow a general chemical law, as acid substances being rejected by acid secretions.

On Human and Fossil Bones. By MM. Gerardin and Preisser.—The following are the principal conclusions of the work. In all kinds of soil, bones, after a longer or shorter period, undergo great changes in their chemical composition. Some of their substances become increased in quantity, while others are diminished; some disappear, and sometimes new ones are added to those that remain. Bones resist all

alteration longer according to the dryness of the soil, and the protection they receive from air and moisture, as in sandy and chalky soils, than they do, when they are deposited in clay, which is always, at least in its upper surface, more or less humid. The changes which they present do not depend at all on the age of the mineral layer in which they are deposited, but merely on the dryness and humidity to which they are exposed; it is owing to this, that fossils in the secondary strata are often less altered in structure than those found in a more recent formation. The principal changes take place in the organic matter, the cellular tissue being converted into gelatine. Sometimes, however, it is not affected. It is always found in less quantity than in recent bones, but the difference is variable. It is occasionally wanting altogether, as when bones have been exposed to the air, or laid in a moist cavern, or in one traversed by a stream of water. The ammonia which is formed by the decomposition of a part of the animal matter, converts the remainder into a soap, which is soluble in water. The thicker and more compact the bone, the slower the process. There is always a larger quantity of phosphate of lime in ancient than in recent bones. In some circumstances this salt undergoes curious changes, being turned to a great extent into sesqui-phosphate of lime, which crystallizes in small six-sided prisms on the surface of the bone. This transformation takes place by a simple change in the elementary atoms of the salt. Both in fossil and recent bones, the magnesia is always combined with phosphoric and not carbonic acid, as can be easily ascertained by treating it after calcination by acetic acid. There is always more carbonate of lime in fossil than in old human bones; in these latter, the proportion of the carbonate is smaller than in recent ones. Does the abundance of this salt in fossil animal bones proceed from calcareous infiltration, or were the bones of antediluvian animals richer in the carbonate of lime than those of the present day? This is a question which it is not easy to answer, but it is most likely owing to the infiltration of the lime. The fluoret of calcium has never been detected in ancient human bones, while it has always been found in fossil animal ones. The existence of this salt being very doubtful in recent human and animal bones, and its presence being constant in all fossils, it necessarily follows, that it must come by infiltration from without, as mineralization and fossilization have no more power to create mineral substances, than the vital force has to form living organs. Whenever then the fluoret of calcium is found in notable quantity in a fossil bone, we are almost certain that it belongs to an antediluvian animal, and not to the human species. Silica and alumina also, which are met with in many fossil bones, and sometimes in considerable quantity, are not naturally a constituent part of bone, and must therefore have come from the soil. The colouring matter of some bones, both human and animal, is not always owing to the same substance. The beautiful green colour of some human bones is caused by the carbonate of copper, the violet and purple by an organic matter, while the fossil bones that are blue, greenish-blue, or green, depend for their colouring matter on the phosphate of iron. The concretions known to geologists by the name of coprolite, are, as Professor Buckland imagined, the urinary and fecal excretions of the ichthyosauri and other large fossil reptiles. The composition of these is similar to that of the *guano*, from the islands in the South Sea. The mummified flesh, or rather the residue of the putrefaction of the body, contains an organic matter very rich in carbon and in azote. It is identical in its properties and its elementary composition to the azulmic acid of Polydore Boullay.

24th October.

On Hemostatic Fluids.—M. Arago, in reference to a pretended hemostatic mentioned at a former meeting, read an extract from the Transactions of the Royal Society of London for the year 1673, in which a hemostatic, known by the name of the French liquid, was applied to a wound made in the crural artery of a dog, with the effect of completely arresting the hemorrhage. In another case, in which the artery was cut across, the bleeding was stopped in seven minutes, and in twenty the animal was able to walk. These experiments were made in presence of a commission of the Society, but M. Arago mentioned that bleeding in general was much more easily arrested in animals, as dogs and sheep, than in the human subject, from the greater plasticity of their blood, and that consequently much importance must not be attached to experiments made on them with hemostatic fluids.

November 7.

Development of Bone.—M. Flourens read a paper on this subject. He first mentioned that he had formerly been in the habit of believing that the medullary membrane of bone only possessed the power of absorption, but that now, from his own experiments, it was evident that it also *produced* bone. He found that when the periosteum of a duck was destroyed, it grew again, but that the medullary canal was obliterated from the new bone having been thrown out by the inner periosteum; that in those experiments in which either the whole external periosteum, or only a portion of it had been removed, the inner membrane was invariably found thickened at the points corresponding to those at which the external periosteum had been removed. If the internal membrane was destroyed, new bone was always thrown out by the external one. The other experiments which he made were performed on various animals, and they consisted in placing rings of platina wire over the periosteum of the tibia. The animals were killed at periods varying from 28 to 40 and 80 days after the experiment, when the platina wire was found more or less covered by periosteum and bone.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

The Society met for the first time this session, on Wednesday, November 9, Dr Maclagan, President, in the chair.

1. *On Abnormal Nutrition (commonly called Inflammation,) and on the mode in which its different Products are developed, as observed in Softening, Suppuration, Granulation, Reorganization of Tissue, Morbid Growths, &c. &c. By J. H. Bennett, M.D. Edin., F.R.C.P.E.*

Dr Bennett commenced his communication, by alluding to the well-known fact, that the blood circulating to every part of the living organism, carried with it the principles of nutrition. These appear to exude through the minuter vessels dissolved in the liquor sanguinis or blood plasma, which constituted a blastema or formative fluid for the formation of nucleated cells. The cells thus formed, underwent different kinds of development, some being formed into bone, others into muscle, nerve, tendon, filamentous tissue, and so on. The insensible formation and development of these cells constituted healthy nutrition.

This process might be deranged, or rendered abnormal, in various ways: 1*st*, from an increase or diminution in the whole mass of the blood; 2*dly*, from a greater or less change in the relative amount of its different chemical constituents; and, 3*dly*, from mechanical and other causes acting more especially upon any part of the frame. It was to the phenomena accompanying the latter condition that Dr Bennett was desirous of directing the Society's attention. These were rapidly described, as they have been observed by numerous authors, and confirmed by Dr Bennett, viz. 1*st*, Contraction of the capillaries, and diminished velocity through them of the flow of blood; 2*dly*, Dilatation of the capillaries, and diminished velocity of the blood's current; 3*dly*, Oscillation of the column of blood, and encroachment on the lymph spaces; 4*thly*, Complete stagnation of the blood, the red corpuscles crowded together in an amorphous mass, and brought into immediate contact with the vascular walls.

During the latter stage of this process, or at its termination, three circumstances might take place: 1*st*, Effusion of serum; 2*dly*, Exudation of blood plasma; and, 3*dly*, Extravasation of blood by rupture of the vessel.—The object of the communication was to describe the changes which followed exudation of the liquor sanguinis.

The blood plasma on being exuded from the blood-vessels, might remain fluid for some time, and would then be necessarily re-absorbed. Vogel and Vogt refer to cases where on cutting across small cavities in the brain, the fluid they contained immediately coagulated. More frequently, however, instead of remaining fluid, the blood plasma coagulates. When this has once occurred, it undergoes changes, which vary in different cases, before it can be re-absorbed or removed from the system. The material exuded constitutes a blastema for the formation of nucleated cells, which generally, though not always, vary in character according to the nature of the tissue in which the exudation takes place.

In parenchymatous organs, the liquor sanguinis usually coagulates in the form of granules, which may be seen coating the vessels, and filling up all the space between

the ultimate tissue of the organ. By this process, the organ affected i fectly dense or hepatized. After a time, or during the exudation, (*exudation corpuscles,*) are formed, which vary in size from 1-100th millimetre in diameter. They become filled with granules from 1-5(of a millimetre in diameter. The cell wall then bursts, and the g By means of this process, and the development of the exuded mass m cells, it is broken up, and rendered fluid. Thus the morbid state in *softening*, is produced.

The exudation corpuscle may be distinguished by its undergoing nc addition of acetic acid. Ether and caustic potash entirely dissolve th moniæ renders them soft and easily broken down.

On the surface of serous membranes, the exudation generally passe very minute fibres. These cells, (*plastic corpuscles,*) are transparent, f 1-75th of a millimetre in diameter, formed of a delicate wall, conta 1-1000th to 1-600th of a millimetre in diameter, varying in numbe They are not perfectly round, but somewhat irregular in form. The tion of the minute fibres is unknown. Gulliver has pointed out that t result of cellular development.

The plastic corpuscle may be distinguished by its wall contracting, a coming thicker on the addition of acetic acid. The shape is also rer regular; it is dissolved in ether and caustic potash, and not affected b

In the skin, loose cellular tissue, &c., the exudation commonly pa usually from 1-100th to 1-120th of a millimetre in diameter, perfec a defined edge, containing several granules, and sometimes a round n cells, (*pus corpuscles,*) swim in a fluid, roll freely on each other, a greenish colour, and constitute the organized part of the fluid universall They are not formed from the exudation corpuscle, or epithelial cel supposed, but arise primarily from the exuded blood plasma.

The pus corpuscle may be distinguished by its swelling out and b transparent on the addition of water; by the cell wall being dissolve in acetic acid, whilst the nucleus is rendered more distinct in the f three granules, generally from 1-300th to 1-400th of a millimetre in d are dissolved in ether and concentrated alkalies.

The exudation, plastic, and pus corpuscles, although most commonl situations referred to, are not exclusively so. The pus corpuscle ma formed in parenchymatous tissues, and exudation corpuscles in cellula times they may be more or less mixed together. Thus the plastic and puscles are commonly formed in the lung, and exudation corpuscles be found swimming among those of pus.

The exudation may also pass into *organization of tissue*, apparently b cess as takes place in a state of health. Should it exist in small quar ther exudation be checked by bringing the divided parts into appositic tion of tissue occurs *rapidly*, and *union by the first intention* is established hand, when this process takes place *slowly*, a state called *hypertrophy*

When loss of substance is occasioned, the exudation passes partly in of tissue, and partly into pus corpuscles, by means of which a *granulatin* duced. A fungous granulation examined under the microscope, exhibits development presented by cells, passing into fibres, as figured by Schwa these are covered with pus corpuscles. As the former increase the latte at length a normal tissue is reproduced, or a dense fibrous mass denon

Lastly, the exudation may be transformed into nucleated cells of d round, oblong, caudate, stellate, more or less square, &c. &c., eithe mixed with fibres, constituting the different kinds of morbid growth by Müller.

Thus in the same manner as in a state of health, cells originatin liquor sanguinis, may undergo different kinds of development, as int nerve, &c., constituting *normal* nutrition; so in a morbid state cells exuded liquor sanguinis, which are transformed into exudation, plast mours, &c., constituting *abnormal* nutrition.

Dr Bennett agreed with Andral and Magendie in considering th flammation was inapplicable to the explanation of the phenomena h

He pointed out how the cardinal symptoms of inflammation, pain, heat, redness, and swelling, were partly dependent on the exudation, and partly on the congestion which preceded it. He had even seen some cases of encephalitis, where the central parts of the brain were softened, and contained numerous exudation corpuscles, although during life no pain or heat, and after death, no redness or swelling had been observed.

Inflammation, therefore, was only a part of one great morbid action occurring in the frame, which might be denominated abnormal nutrition, and more especially that species of it dependent on increased exudation of liquor sanguinis.

Numerous authors had referred inflammation to increased nutrition or secretion. Dr Alison more especially seemed to consider this essential to the inflammatory process, (Lib. of Med., Art. *Inflammation.*) Before the doctrine of cyto-genesis was established, however, nutrition of parts was invariably connected with vascularity, and pus was considered an unorganized fluid. At present we must regard pus, lymph, softening from exudation, &c., as being highly organized, and resulting from an active process of nutrition. Hitherto increased nutrition, as connected with inflammation, has been mere hypothesis; Dr B. stated, that it was the object of his communication to *demonstrate* its correctness.

Remarks, chiefly on the inapplicability of the term abnormal nutrition, as applied to some of the changes induced by inflammatory action, were made on Dr Bennett's paper, by Drs Maclagan, Macaulay, and Professors Miller and Simpson.

2. *Cases of Spectral Illusions. By Robert Paterson, M.D., Leith.—(Communicated by Professor Simpson.)*

After a few premises, Dr Paterson pointed out what appeared to him to be the first stage in the phenomenon of spectral appearances, viz. the power in the retina of retaining or continuing vivid impressions; a second stage was that of recalling impressions to the retina; and from these steps the transition appeared to him easy to those illusions which are as remarkable as they are sometimes alarming. Dr P. then proceeded to detail three cases which had occurred to him.

Case 1st was that of a middle-aged man, who fancied that there was a dark indefinite line running down the centre of every thing he looked at. This individual was in good health at the time Dr P. last saw him.

Case 2d was that of a lady who had not long recovered from an attack of fever, and to whom the phantom of her father, sitting in his high-backed arm-chair, appeared to sit in the same room with her, for nearly half an hour continuously, and during the light of a midsummer evening about seven o'clock. The lady's father was well at the time, and lived for many years afterwards.

Case 3d was that of a literary gentleman, whose illusions were numerous and varied. He sometimes fancied that he saw a skull, at another, a man with a blue cloak on, and at a third, the figure of a deceased friend, who even spoke to him and touched him. This case was looked upon as by far the most remarkable, as his senses of sight, touch, and hearing, had been all equally deceived. This gentleman is now in good health.

Dr P. concluded by a few generalizations on the phenomenon of spectral appearances, in which he expressed himself of the opinion, that spectral illusions are only a modification of dreams, ("waking dreams,") and that the transition from dreaming, and the strongest and most vivid spectral illusions, are so gradual, and can be so readily traced, (at least when associated with the modifications of light and shadow and drapery,) as to leave no doubt in his mind of this fact.

Cases analogous to those detailed by Dr Paterson were mentioned by Dr Abercrombie, Dr Gairdner, and Dr Dunsmure.

3. *Senecio Jacobea.*—Dr Dunsmure mentioned, that since he last had brought the subject before the Society, he had made further trials of the extract of Senecio jacobea in gonorrhœa. His former want of success with that remedy having perhaps been owing to the extract used being made from the plant in autumn, when too old, he had employed extract prepared during the summer. He had not, however, met with any better results than before.

Dr Douglas Maclagan stated, that he had also made further trial of it, but had not observed any beneficial effect from it, except that his patients had themselves remarked it to have a distinct diuretic action.

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members in the month of October, 1842.

Adams, R. D., Nettleshead.
Acheson, J. J., Royal Navy.
Boyd, W., Durham.
Best, J. M., Worcester.
Bunce, R., Plymouth.
Bond, C., Long Sutton, Somerset.
Bulb, M. M., Cambridge.
Barnes, R., Higham, Kent.
Coman, J., Waterford.
Clarke, H. St John, Sheffield.
Christie, J., Aberdeen.
Day, W. M. H., Bristol.
Dagliesh, W. M., Masham, Yorkshire.
Dalton, W., Carlisle.
Forster, J. H., Dublin.
Greaves, H., Robert Street, Hampstead Road.
Gerrard, James, Banffshire.
Hole, W. H., Appledore, Devon.
Horton, J. J., Birmingham.
Hadduck, E., Dudley.
Hill, H., Worcester.
Kenyon, J., Hootou Pagnele.
Lancaster, J., Clifton.
Lee, T. S., Cambridge.
Maasdorp, G. H., Cape of Good Hope.
Moore, J., Belfast.
Marchant, W. D., Omagh, County Tyrone.
M'Donogh, J. A., Dublin.
Moore, E., Hales, Owen Salap.
Purchas, A. G., Pilstone, Chepstow.
Peat, Thomas, Paris.
Penny, R. B., South Lambeth.
Rhodes, J., Pontefract.
Rogers, J., West Meon, Hants.
Stockil, G., Doncaster.
Scholfield, H. D., Middleton.
Steele, J. H., Royal Navy.
Thomas, W., Hebden Bridge, Yorks.
Thurgar, W. C., Norwich.
Telfair, C. D., Durham.
Taylor, W. E., London.
Vickerman, F. L., Gower Street.
Walker, W. G., Eastbourne.
Wrixon, C., Dublin.
Woolcomb, R. W., Isle of Wight.
Wildash, H. C., Wye, Kent.
Wade, J., Pimlico.

ROYAL COLLEGE OF SURGEONS IN EDINBURGH.

Since Lammas last to the 11th November, the following Gentlemen have received Diplomas as Licentiates of the College:—

SCOTLAND.

K. Menzies, Edinburgh, Edinburghshire.
Charles Stewart, ditto, ditto.
David Reid M'Kinnon, Aberdeenshire.
William Williamson, ditto.
William Fraser, Banffshire.
John Dickson Johnstone, Dumfries-shire.
Robert Walker Black, Fifeshire.
Patrick Black, Lanarkshire.
John Mackintosh, Inverness-shire.
Henry Reid, Linlithgowshire.
William Smellie, Orkney.
William Tait, Peebles-shire.
William Smellie Johnstone, Stirlingshire.

ENGLAND.

William Thomas Hoskin, Devonshire.
Frederick Denbigh Jones, Yorkshire.
Thomas Bailey Willam Potts, Wiltshire.

IRELAND.

Thomas Moorhead, County Monaghan.
Samuel Kennedy Parkinson, Co. Down.
Thomas Bell Wright, Ireland.
Hugh Smith, ditto.
Charles Hill, ditto.
Constantine B. O'Donnell, Co. Donegal.
John James Hayes, County Limerick.

ABROAD.

Francis Wemyss Irvine, N. S. Wales.
Park Benjamin Tucker, Bermuda.
John A. Fehrszen, Cape of Good Hope.

HINTS TO MEDICAL STUDENTS.

[We earnestly recommend students, and their guardians, to peruse the following advices, extracted from a cotemporary journal. They do not apply to the Dublin school only. Let students beware of billiard rooms and *class-recruiters*, despise the teachers who stoop to higgle about the price of a ticket, and attend only those who are acknowledged to be competent to teach the branches they profess.]

"We regret to be obliged to say, that inexperienced pupils are often led astray as to the laws and regulations of the medical institutions by persons more interested in securing a portion of their small stock of ready cash, than in securing for them a good education, and a respectable professional character. We do not here allude to

those who are said to prowl about the precincts of the public institutions, to pick up simpletons for the sake of the recruiting fee, which, it is suspected, some allow them; but to those who would fain have it supposed that they are quite above such things, yet allow their zeal in the cause they espouse to get the better of their sense of what is right, so far as to suggest doubtful readings of plain passages, and curious constructions of obvious meanings. We are anxious, in fact, to put young men upon their guard against the representations and importunities of those who endeavour to lead them to pursue a particular path, because it runs through their grounds, in order that they may exact the toll; or, in other words, to warn them to beware of the advice of persons deeply interested in the choice the student may make of a qualification to practise. At the same time, we are also anxious to make our brethren in the provinces, as well as the public at large, acquainted with the real state of the case, as to present arrangements for securing properly qualified practitioners for the public service, and to afford such information as will enable governors of hospitals and dispensaries to form a more correct judgment as to the qualifications of candidates for office. We some time ago suggested, and we now repeat the suggestion, that local associations over the country should call on young practitioners, settling in their respective districts, to produce their qualifications to practise, and to show the proofs they possess of being fairly entitled to such qualification before they admit them to consultation, or recognise them as regular members of the profession. This would afford some check against the smuggling of uneducated persons into our profession, under the culpably lax system of the schools, and go far to put a stop to the trade now driving in the manufacture of mock doctors. The regulations of colleges look all very fine on paper; but the opportunities and facilities afforded pupils and teachers for their evasion, frequently render them perfectly nugatory: so much so, that notwithstanding the respect we entertain for the individuals composing the councils, courts, and boards, of public institutions, we cannot help suspecting, that some of them are not altogether ignorant of the existence of these facilities and opportunities, and perhaps not very anxious to enforce a system of discipline, calculated to render their regulations more stringent. Certificates, charts, returns, and declarations, are little better than waste paper, unless they be verified and compared; and arming irresponsible persons with 'discretionary powers,' granting dispensations to others, declaring regulations not to be retrospective, and providing individuals with private letters of explanation, to be exhibited to inexperienced pupils, is undoing with one hand what has been done by the other, and encouraging practices of the most reprehensible description.

"What makes the mal-practices to which we allude more deplorable, is the circumstance, that the difference as to the length of time and expense between the best education now required, and the worst contrivances of wholesale traders in certificates, are comparatively scarcely worth consideration in a pecuniary point of view. A parent may perhaps save three, or even six months in time, and ten, or even twenty pounds in money, by forcing a child in a hurried manner through the schools, and denying him the best instruction; but he does not consider, that by so doing, he sends him into professional life incapable of availing himself of the opportunities afforded him, and disabled from competing with those around. It is equally deplorable to see young men so dead to all feeling of generous emulation, so destitute of self-confidence and self-respect, and so mean and grovelling in their views and habits, as to fly from little difficulties, rather than encounter them, and to be content to slip in by the back door, rather than enter boldly by the front. How can a poor-hearted creature, who knows no difference in the value of instruction, but the price he pays for it, complain hereafter, if those who employ him estimate his services in the same way! What right has he to repine, when he finds himself reduced to the rank and lot of a sixpenny vaccinator; or compelled to submit to the most laborious drudgery for the most miserable pittance? We do not, however, mean to say, that the pupil himself is the only person to be blamed for this miserable practice of sacrificing his education to the most paltry considerations; on the contrary, we know that he is generally acutely sensible to the injustice of thus giving him the shadow, and not the substance of a profession. It is far more generally his own parents who are to be reproached for such short-sighted policy. They seem to think, that all that is necessary, is to procure for the boy a diploma to enable him to earn a livelihood, never recollecting, that every one knows that such a document is now no evidence that the possessor of it is qualified to act as a medical practitioner. The day is gone by,

when the title of doctor or surgeon, with a brass trade, could be relied on as a provision for a ch proof of acquirements and capacity to secure pul not to be found in cheaply purchased certificate tures, or vague and general testimony that the *Dublin Medical Press*, Nov. 2, 1842.

OBITURARY.

M. HOURMAN has fallen a victim to his profes contracted syphilis at the Hôpital l'Ourcine, while finger being excoriated. An affection of the bon proved fatal.—*L'Expérience.*

BOOKS RECEIV

1. An Account of Askern and its Mineral Springs; together with a sketch of the natural history, and a brief topography of the immediate neighbourhood. By Edwin Lankester, M.D., F.L.S. 12mo, pp. 151. London, 1842.
2. Report on the Chief Results obtained by the use of the Microscope in the study of Human Anatomy and Physiology. By James Paget, Demonstrator of Morbid Anatomy at St Bartholomew's Hospital. 8vo, pp. 51. London, 1842.
3. Observations on some points in the Anatomy, Physiology, and Pathology of the Blood. By Wharton Jones, F.R.S., Lecturer on Anatomy. 8vo, pp. 24. London, 1842.
4. Observations on the expediency of abolishing Mechanical Restraint in the Treatment of the Insane in Lunatic Asylums. By John Crawford, M.D., Member of the Royal College of Surgeons, London, and of the Faculty of Physicians and Surgeons, Glasgow, Pro-

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NOTICES TO CORRESI

URINE OF PREGNANCY.—We beg that the follow with DR GRIFFITH'S paper, which was printed off

"Since the above was written, a paper has beer by Dr Kane. The following lines, among others *Gazette* for Nov. 6, 1842, as extracted from his o

"The cloud-like appearance which is alluded although possessed of much interest, *I have not the forming pellicle; I have supposed it to be nothing writers, depending upon the imperfect aggregation of* repeatedly when there was no pregnancy to accou sent where the fluid presented perfect transparen

OBSTETRIC PERFORATORS.—MR B. W. HILL Glasgow, writes to say, that he made an obstetric to that figured and described by Dr Smith in our he ascribes to Mr Alex. Zeigler; and consequen designated "Dr Smith's Perforator."

DR MALCOLM'S "*Experiments on the proportion ration in typhus*," in our next.

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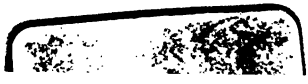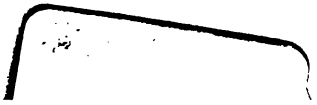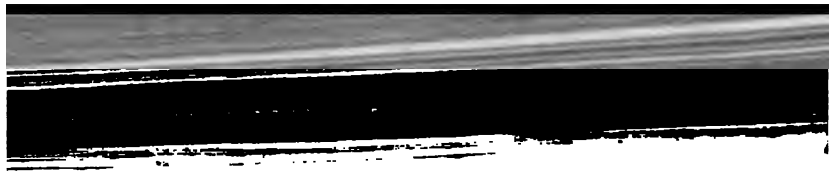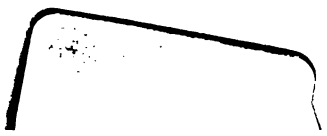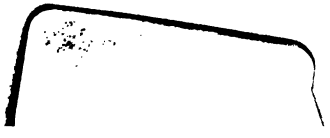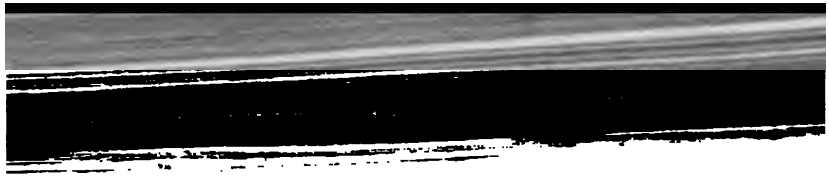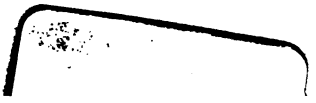
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